

A RARE FINDING OF THYROID IMA ARTERY ARISING FROM THE AORTIC ARCH WITH ABSENCE OF LEFT INFERIOR THYROID ARTERY: A CASE REPORT

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ABSTRACT

An anomalous artery was seen arising from the arch of aorta and coursed upwards to the isthmus of thyroid gland. In the same cadaver, on further exposure of blood vessels supplying the thyroid gland, it is observed that the left inferior thyroid artery was absent. Though the incidence of thyroid ima artery arising from brachio cephalic trunk and subclavian artery was reported earlier, this is a rare finding where the artery arose from arch of aorta with absence of left inferior thyroid artery.

Key Words: Blood supply of thyroid, Inferior thyroid artery, Arch of aorta

INTRODUCTION

Arteria thyroidea ima is a small, inconstant but important artery of thyroid gland. In addition to thyroid, the artery may also supply the thymus gland and neck viscera [1]. It is present in 3% of cases and when present, it emerges from brachio cephalic trunk, the arch of Aorta, the subclavian artery, right common carotid artery or internal mammary artery [2].

Krudy et al stated that an additional midline artery to the thyroid posing a threat in cervico surgical operations was first described by Neubauer in 1772 and so was named Neubauers artery [3]. Hollishead (1962) described an accessory artery replacing the inferior thyroid artery as thyroid ima artery [4]. The knowledge of thyroid ima artery plays a significant role in neck surgeries [5].

CASE REPORT

The thyroid ima artery in this case report was observed in an embalmed adult male cadaver, aged 53 years, during routine dissection in the department of Anatomy at Chalmeda Anand Rao Institute of Medical Sciences, Bommakal, Karimnagar. During the neck dissection, an anomalous artery was observed in front of trachea,

ascending upwards to reach the isthmus of thyroid gland. On further exposure of thorax and tracing the artery to its origin, it was noticed that this slender artery arose from the upper margin of arch of aorta and coursed towards isthmus without giving any branches. On further dissection to expose the blood vessels of thyroid gland, it is observed that the inferior thyroid artery on the left side was absent. The right inferior thyroid artery had normal origin and course.



Figure 1: ATI (Arteria Thyroidea Ima)

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DISCUSSION

The thyroid ima artery is the inconstant third artery that supplies blood to the isthmus of the thyroid gland. The calibre of thyroid ima artery may be as large as the inferior thyroid artery or merely a small twig.

A review of literature shows marked degree of variability in the frequency, the site of origin and the size of thyroid ima artery. The incidence varies from 1.5 to 12.2% [6]. The commonest site of origin of the thyroid ima artery is from the innominate artery [1.9 to 6%] followed by right common carotid artery in 1.4% to 1.7 % [7]; from the arch of aorta on left side in 0.36 % [4]. Bilateral thyroid ima arteries have been reported by Gruber. [7].

Faller et al observed that in 60% of 100 sides that they investigated and reported, the incidence of absence of inferior thyroid artery has been 0.20% to 5.9 %. When an inferior thyroid artery is absent, its place is usually taken by a branch of superior thyroid artery of same side or the inferior thyroid artery of other side or is taken by thyroid ima artery [6]. The present study coincides with the above observation.



Figure 2: Same cadaver showing absence of Left inferior thyroid Artery.

Phylogenetically, the thyroid gland has a rich network of nutrient vessels. During development many vessels disappear except the superior and inferior thyroid arteries, persisting as the regular supply. Occasionally a part of the original vascular network connecting the brachiocephalic, the arch of aorta and carotids may persist and by fusion may either supplement or substitute for the regular arteries as the thyroid ima artery. [8]

CLINICAL SIGNIFICANCE

The knowledge of the course of the thyroid ima artery is important for surgeons while performing neck surgeries or during tracheostomy procedures [9]. Atypical branching of vessels can cause intraoperative bleeding and/or post operative hematoma by damaging the thyroid ima artery [10]. The knowledge of this artery is necessary in angiography done as a preoperative requisite in the thyroid and parathyroid surgeries, which could be missed if this artery is not selectively injected.

CONCLUSION

The thyroid ima artery cannot be undermined in clinical practice as per its vulnerability to be accidentally cut or injured during tracheostomies or mediastinoscopy leading to uncontrollable haemorrhage.

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