

Case Report

VARIATION IN THE STRUCTURE OF LEVATOR GLANDULAE THYROIDEA – A CASE REPORT

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Abstract :

The thyroid gland is an important and easily approachable endocrine gland, situated in the lower part of anterior aspect of neck. The Levator glandulae thyroidea (LGT) is a fibro-musculo-glandular band. It is usually present on the left side connecting the pyramidal lobe of thyroid gland to the hyoid bone. During the routine dissection of neck it was observed that the LGT was present on the right side of midline of neck extending from pyramidal lobe of the right side of isthmus of thyroid gland to the inferior border of hyoid bone. It was muscular throughout with 6.5cm in length, 1.5cm breadth and 1.75mm in its thickness. This is a rare variation in the morphology and situation of LGT observed for the first time. The presence of LGT and its anatomical variations gain importance in the pathologies related to thyroid gland and their treatment modalities.

Keywords: Isthmus, Thyroid gland, Levator glandulae thyroidea, Morphology.

Background :

The thyroid gland is the largest endocrine gland in the body. It is an important and easily approachable endocrine gland, situated in the lower part of anterior aspect of neck¹. It is a horseshoe-shaped mass clasping the upper part of the trachea. The thyroid gland consists of two symmetrical lobes united by an isthmus, lies in front of the second, third and fourth tracheal ring. A pyramidal lobe of variable size may be present extending from the isthmus or from the junction of the isthmus and one of the lateral lobes (usually the left) and connected to the thyroid cartilage and hyoid bone^{1,2}.

There may be in addition to the pyramidal lobe, a fibromuscular band known as the levator glandulae

thyroideae (LGT) which usually replace the upper part of the pyramidal lobe. The LGT is a fibro-musculo-glandular band. It is usually present on the left side connecting the pyramidal lobe of thyroid

gland to the hyoid bone. The presence of LGT and its anatomical variations gain importance in the pathologies related to thyroid gland and their treatment modalities^{1,3,4}. This case has been presented here to report one of such variations which has got a good clinical significance.

Case Report :

During the routine dissection of neck in an elderly male cadaver, it was observed LGT on the right side of the midline of neck extending from isthmus of thyroid gland to inferior border of hyoid bone. It was muscular throughout with 6.5cm in length, 1.5cm breadth and 1.75mm in its thickness. Initially the skin, superficial fascia and investing layer of deep fascia were carefully reflected and the isthmus was identified lying at the level of 2nd tracheal ring. The pyramidal lobe was situated on the right side of the midline along the upper border of the isthmus of thyroid gland. The sternohyoid muscle was identified and reflected above to its proximal attachment to hyoid bone on both right and left side and LGT was situated on right side. The course of the LGT was carefully dissected. The connective tissue septum was found separating it from overlying sternohyoid and superior belly of omohyoid muscles.

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Sternohyoid was found separately on the lateral side. A small branch from nerve to omohyoid was found to be supplying the LGT. On the left side neither pyramidal lobe nor the LGT was found. The anastomosis between the branches of right and left superior thyroid arteries along the superior border of isthmus was noted.



Figure 1 : Muscular levator glandulae thyroidea (LGT) situated on the right side of midline of the neck extending from pyramidal lobe of thyroid gland to lower border of hyoid bone.

Discussion :

According to Standring, the LGT extends from the pyramidal lobe or the upper border of the isthmus usually on the left side, to the body of hyoid bone above². According to S.D. Joshi et al, the LGT was present in 27 (30%) cases. The LGT was attached to hyoid bone in 18 (66.66%) instances. It was attached to the upper border of thyroid cartilage in 14 (14.81%) and to the lower border of the thyroid cartilage in 5 (18.51%) cases⁵. Harjeet et al.

described it in 94 (22.9%) cases in males and 17 (10.6%) cases in females. They described it as extending caudally from the body of the hyoid in 53.2% of males and in 52.9% of females, in 10.8% from the median thyroid ligament, and from the lower border of the lamina of the thyroid in 34.04%⁶. Marshall found LGT attached to the hyoid bone in 17 (28.3%) cases, and in 9 cases it merged with the fascia covering the thyroid cartilage⁷. Faysal et al. observed an unusual case in which LGT extended from the apex of the mastoid process⁸. Enayetullah found LGT in 32% cases and its association with pyramidal lobe in 22% cases. In most cases LGT were associated with pyramidal lobe and most of the pyramidal lobes were situated on the left side⁹. Gunapriya et al., reported a case of presence of LGT with absence of pyramidal lobe on the right side, which stretched from the upper border of isthmus of thyroid gland, to the lower border of the lamina of thyroid cartilage, which measured 1 cm in length and 0.6 cm in breadth¹⁰. Sreekanth Tallapaneni et al., observed that the LGT was arising from the upper part of anterior border of the thyroid cartilage and got inserted into the substance of the right lobe along the lower 2/3rd of its anterior border with the agenesis of the isthmus¹¹.

Conclusion :

Though previously many authors have mentioned about the presence of LGT and its variations, the present case is a rare one. This study signifies the need for thorough understanding and the knowledge of anatomy of thyroid gland and its associated variations.

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