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Case Study

Levator glandulae thyroideae: a fibromusculoglandular band – A case report

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Abstract: *In relation with thyroid gland, functional as well as morphological variation is very common in individual to individual. Levator glandulae thyroideae, a band extending from pyramidal lobe to the thyroid cartilage or hyoid usually on left side. We found in a 72years old female cadaver, a band extending from right lobe of thyroid to hyoid bone with hypoplasia of left lobe and band was innervated by external laryngeal branch of vagus. Microscopically this band is fibromusculoglandular. Knowledge of anatomical and developmental variation and its nerve supply will aid the surgeon for safe surgeries.*

Key words: *Thyroid, Hyoid, Pyramidal lobe, Hyoglandularis*

Introduction

Thyroid is an endocrine gland to regulate basal metabolic rate. Normal thyroid weights 20-25gm. The functional as well as morphological variation is very common in individual to individual. Levator glandulae thyroideae (LGT) is an important band from pyramidal lobe or lobes or isthmus of thyroid gland. This structure is also having glandular tissue. It is seldom midline in position (Hollinshead, 1985, Standring, 2005). Variation in shape of two lobes was observed by Marshall (1895). He reported 60 children cases, a great majority of which he apparently regarded as in some degree a bnormal. Mori (1964) classified LGT in to five types; a) Hyopyramidalis, b) Thyreopyramidalis, c) Thyreoglandularis, d) Hyoglandularis and e) Tracheoglandularis, according to their attachments.

Case

During routine dissection in anatomy lab, of female cadever who was aged 72 years the presence of levator glandulae thyroideae was observed on the right side lobe (Figure 1). Along with this we also found hemiagenesis of one lobe or right lobe was larger than the left lobe. Length and breadth of right thyroid lobe was 34.24mm and 22.28mm respectively. Length and breadth of left thyroid lobe was 29.20mm and 19.89mm respectively. Isthmus of thyroid was 7.78mm x 6.19mm.levator glandulae thyroidae was 33.17mm from right thyroid lobe. This levator glandulae thyroideae extends from right anteromedian border of thyroid. A careful dissection revealed external laryngeal branch of the right superior laryngeal had supplied this right levator glandulae thyroideae.

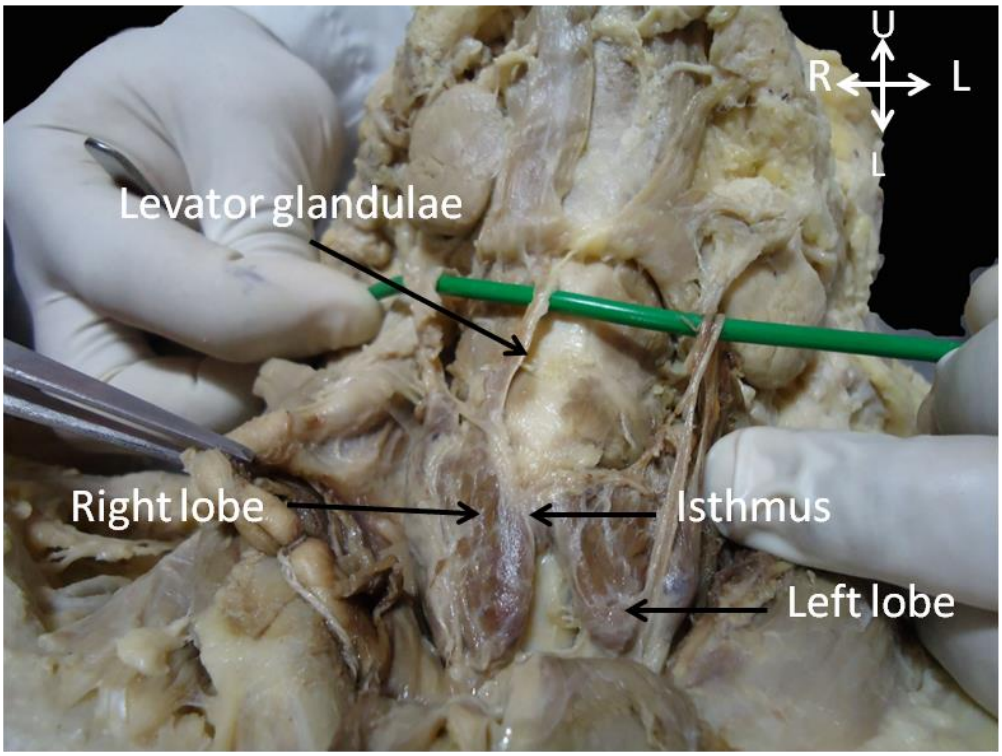

Figure 1: Thyroid gland showing left lobe hypoplasia and Levator glandulae Thyroideae from right lobe.

Discussion

Levator glandulae thyroideae is a fibromuscular band which is presented from pyramidal lobe or from isthmus usually on left side (Standring, 2005). It receives innervations from external laryngeal nerve. In another study in 90 cases done by Joshi et al (2010), LGT was present in 30% cases, LGT was attached to hyoid bone in 66% and it was attached to the upper and lower border of thyroid cartilage 14.8% cases and 18.5% cases. Herjeet et al (2004) found male and female distribution of LGT 22.9% and10.6% respectively. They found LGT as extending from body of hyoid in 53.2% of male and 52.9% of female. Marshall (1895) demonstrated LGT attached to the hyoid bone in 28.3% and to thyroid cartilage and its fascia in 15%.

In our case, female cadaver had LGT on right side extend from right lobe of thyroid to hyoid bone with hypoplasia of left lobe of thyroid. This LGT has got innervations from external laryngeal branch of vagus. Microscopic anatomy revealed that fibromucular glandular tissue in LGT (Figure 2).

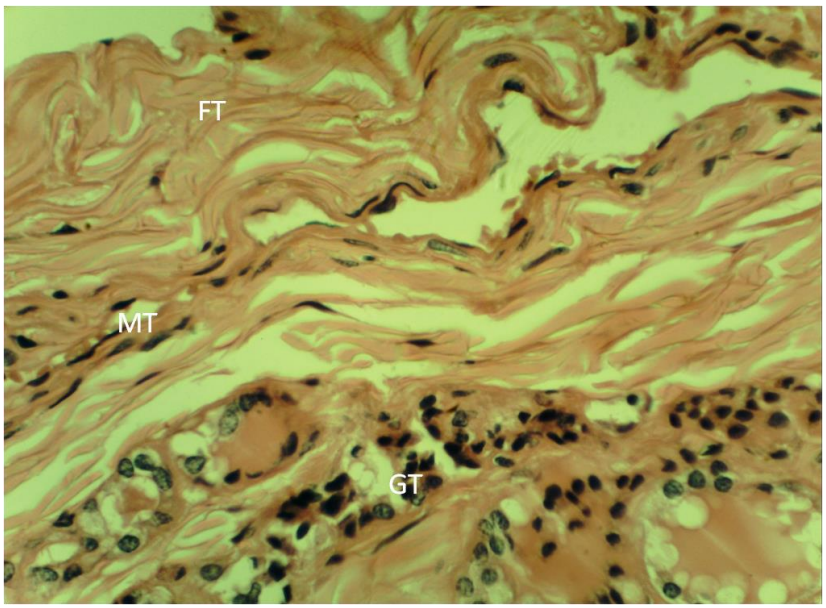

Figure 2: Photomicrograph of Levator glandulae Thyroideae having fibrous tissue (FT), Muscular tissue (MT), glandular tissue (GT)

Different author have their different opinions regarding origin of LGT. Ranganathan(2002) found it is detached part of infrahyoid muscle innervated by ansacervicalis. Hamilton and Mossman (1978) said fibrous and muscular replacement of pyramidal lobe. Gunapriya et al reported thyroglandular type of LGT according to Mori's classification. This band has no innovation and with fibroglandular diversity. Chaudhary et al (2013) reported a case of LGT, extend from hyoidbone to thyroid lobe on left side, this has got innervations from external laryngeal branch of vagus. They found LGT was fibromucular glandular tissue. Godart (1847) found mucular basis of LGT by nitric acid test. Here histologically it is fibromusculoglandular type. In conclusion, our study call attention to the different variation and knowledge of anatomical and developmental variation and its nerve supply will aid the surgeon for safe surgeries

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