

CASE REPORT

An anomalous belly of sternothyroid muscle and its significance

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Abstract

The sternothyroid muscle and other infrahyoid muscles play a vital role in the process of vocalization, swallowing and mastication by mobilizing the hyoid bone and thyroid cartilage. During routine dissection of a 70-year-old male cadaver, we observed an anomalous sternothyroid muscle. It was arising from the posterior surface of the manubrium sterni and partly from the cartilage of the first rib. After a distance of 3.3 cm, the belly of sternothyroid muscle was divided into lateral and medial fibers. The lateral belly was inserted above the oblique line on the lamina of the thyroid cartilage, but the medial additional belly turned into a tendon, which was crossing over the thyroid artery and inserted to the hyoid bone and intermediate tendon of digastric muscles. The superior thyroid artery was below the above tendon on its way to the thyroid gland. The muscle was innervated by a branch from the ansa cervicalis.

Keywords: infrahyoid muscles, sternothyroid muscle, additional tendinous belly, muscle variation.

Introduction

Sternothyroid is shorter and wider than sternohyoid, and lies deep, and partly medial to it. It arises from the posterior surface of the manubrium sterni inferior to the origin of sternohyoid and from the posterior edge of the cartilage of the first rib. It is attached above to the oblique line on the lamina of the thyroid cartilage, where it delineates the upward extent of the thyroid gland [1].

The infrahyoid muscles vary considerably in the extent of their development. They may be more or less continuous. Bergman RA *et al.* (2007) described various form of sternothyroid muscle variation [2].

The thyrohyoid is often continuous with the sternothyroid. The medial fibers on both sides of sternothyroid muscle may form a cruciate pattern. The muscle may exist in two strata, or it may be divided longitudinally into bundles; the lateral bundle may terminate in cervical fascia. A bundle of fibers, levator glandulae thyroideae, is sometimes found passing either from the lower border of the hyoid or from the thyroid cartilage to the lobe, isthmus, or pyramid of the thyroid gland. Included are those fibers joining the inferior constrictor of the pharynx to the thyroid gland.

Material, Methods and Results

During routine dissection of a 70-year-old male cadaver, we observed an anomalous sternothyroid muscle. It was arising from the posterior surface of the manubrium sterni and partly from the cartilage of the first rib.

After a distance of 3.3 cm, the belly of sternothyroid muscle was divided into lateral and medial fibers. The lateral belly was inserted above the oblique line on the lamina of the thyroid cartilage, but the medial additional belly turned into a tendon, which was crossing over the thyroid artery and inserted to the hyoid bone and intermediate tendon of digastric muscles.

The superior thyroid artery was below the above tendon on its way to the thyroid gland (Figure 1).

A branch from the ansa cervicalis innervated the muscle.

Discussion

The intrinsic muscles of the tongue, the infrahyoid muscles and the diaphragm are derived from a more or less continuous pre-muscle mass, which extends on each side from the tongue into the lateral region of the upper half of the neck and into it early extend the hypoglossal and branches of the upper cervical nerves. The two halves, which form the infrahyoid muscles and the diaphragm, are at first widely separated from each other by the heart. As the latter descends into the thorax the diaphragmatic portion of each lateral mass is carried with its nerve down into the thorax and the laterally placed infrahyoid muscles move toward the midventral line of the neck [3].

In the present variation the anomalous medial belly attached into two unusual sites, hyoid bone and intermediate tendon of the digastric muscle. On the way to its insertion, the tendon of the above muscle seems to compress the superior thyroid artery.

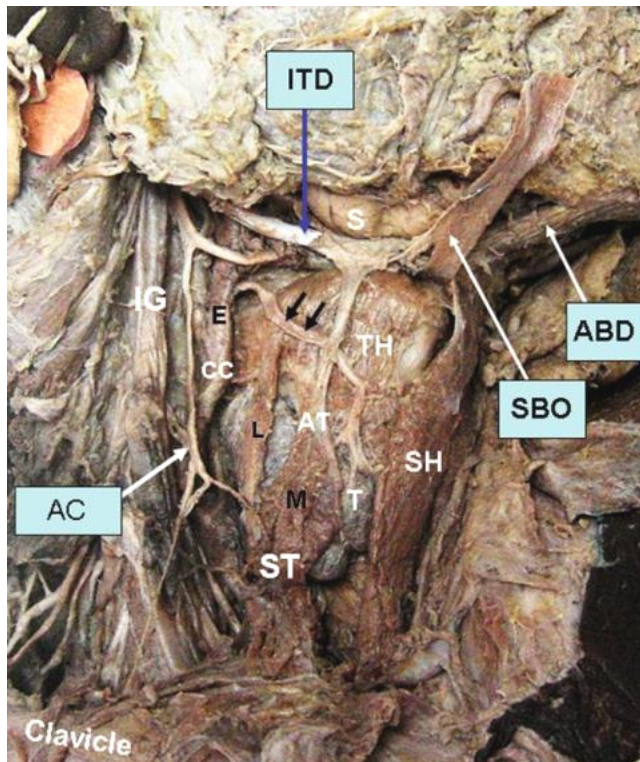


Figure 1 – Right antero-lateral view of the head and neck region: SH – sternohyoid muscle, ST – sternothyroid muscle, TH – thyrohyoid, T – thyroid gland, IG – internal jugular vein, CC – common carotid artery, E – external carotid artery, S – submandibular gland, ITD – intermediate tendon of digastric muscles, ABD – anterior belly of digastric muscle, SBO – superior belly of omohyoid reflected, AC – ansa cervicalis, AT – additional tendinous part of sternothyroid muscle, L – lateral belly of sternothyroid, M – medial belly of sternothyroid. Note the sternothyroid muscle was dividing into two bellies, lateral belly was inserting above the oblique line of the thyroid cartilage and the medial additional belly forms a tendon, which was crossing over the thyroid artery on its insertion to the hyoid bone and intermediate tendon of digastric muscles.

The literature regarding the present variation of sternothyroid muscle is not reported to the best of our knowledge.

☞ Conclusions

The paucity of sternothyroid muscle variation in the modern literature makes the present variation clinically significant. The present case will help the clinicians and surgeons, while performing radical neck surgery and thyroidectomy.

References

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