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# A UNILATERAL ANOMALY OF THE SUPERIOR LARYNGEAL ARTERY PASSING THROUGH THE THYROID CARTILAGE LAMINA

Roberto Bastos Silva, Marcus Vinicius Fernandes Dias, Rodrigo Motta Pacheco Fernandes, Marcio Antônio Babinski

Department of Morphology, Biomedical Institute, Fluminense Federal University, Niterói (RJ), Brazil.

## ABSTRACT

The superior laryngeal artery supplies blood to the larynx and has important implications for neck surgery. We report a unilateral, anomalous continuation of this superior laryngeal artery in an elderly male cadaver. The superior laryngeal artery was enlarged from its origin down to the lateral lamina of the thyroid cartilage. At this point, the artery passed through the lamina and continued as an internal branch that supplied the larynx. No other vascular anomalies were noted. Although this anatomical variation is uncommon, the possibility of its occurrence should be kept in mind by clinicians and surgeons who manipulate this anatomical area.

**Key words**: Anatomy, anomaly, human, neck, vessels

## INTRODUCTION

The superior laryngeal artery (*a. laryngea superior*) accompanies the internal laryngeal branch of the superior laryngeal nerve beneath the thyreohyoideus muscle and pierces the hyothyroid membrane to supply the muscles, mucous membrane, and glands of the larynx before anastomosing with the branch from the opposite side [4,7,10,13].

The presence of an anomalous foramen in the thyroid cartilage lamina is rare [2,5,6,14], as are anomalies of the superior laryngeal artery [2]. However, variations in the nerves and arteries of this region has been documented [1,2,8] including the inferior thyroid artery and its branches [2,11,12].

Aberrant branches of the superior laryngeal nerve passing through the thyroid foramen have been reported [3,9]. Here, we describe a rare variation of the superior laryngeal artery that passes through the lateral lamina of the thyroid cartilage.

## MATERIAL AND METHODS

This study was approved by the ethics committee for human research at the Federal Fluminense University and complied with the declaration of Helsinki (as revised in Edinburg, 2000) and with the guidelines of an internal review board.

## REPORT OF CASE

During gross anatomical dissection of the right neck of a male cadaver fixed in 10% formalin, the right superior laryngeal artery was found to be slightly enlarged from its origin down to the lateral lamina of the thyroid cartilage. At this point, the artery passed through the lamina and continued as internal branch that supplied the larynx (supraglotic region) (Figs.1 and 2). The anomalous artery originated from the superior thyroid artery and had abnormal course only in the opening for the larynx. No other vascular anomalies were noted.

## DISCUSSION

This anomaly was an interesting finding because of its uncommon nature [2,4,7,10,13], particularly since most reports only mention the possible presence of a foramen in the thyroid cartilage lamina [2,5,6,10,14]. Anomalous branches of the superior laryngeal artery are uncommon [2]. However, the superior laryngeal nerve has been reported to run through the thyroid cartilage [3,9]. The surgical implications of these variations have been discussed by Kirchner *et al.* [6] and Espinoza *et al.* [3].

Bergman *et al.* [2] pointed out that the superior laryngeal artery may occasionally traverse the thyroid cartilage through an anomalous foramen, but these authors did not comment on the possibility of an aberrant superior laryngeal artery passing through the thyroid foramen. Indeed, this variation has been reported only by Adachi [1] in Japanese cadavers. Hence, the present report is one of the few cases in the literature. This anatomical variation should be kept in mind by clinicians and surgeons who may manipulate this anatomical area.

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Correspondence to: Márcio Antônio Babinski, MSc
Departamento de Morfologia, Instituto de Biomédico, Universidade Federal Fluminense - UFF, Rua Ernani Mello, 101, São Domingos, CEP 24.210-150, Niterói, RJ, Brasil. Fax: (55) (21) 2629-2414. E-mail: babinski@vm.uff.br. E-mail: mababinski@gmail.com

**Figure 1**. Photograph of the laryngeal region showing the abnormal internal branch of the superior laryngeal artery traversing the thyroid cartilage (**asterisk**).

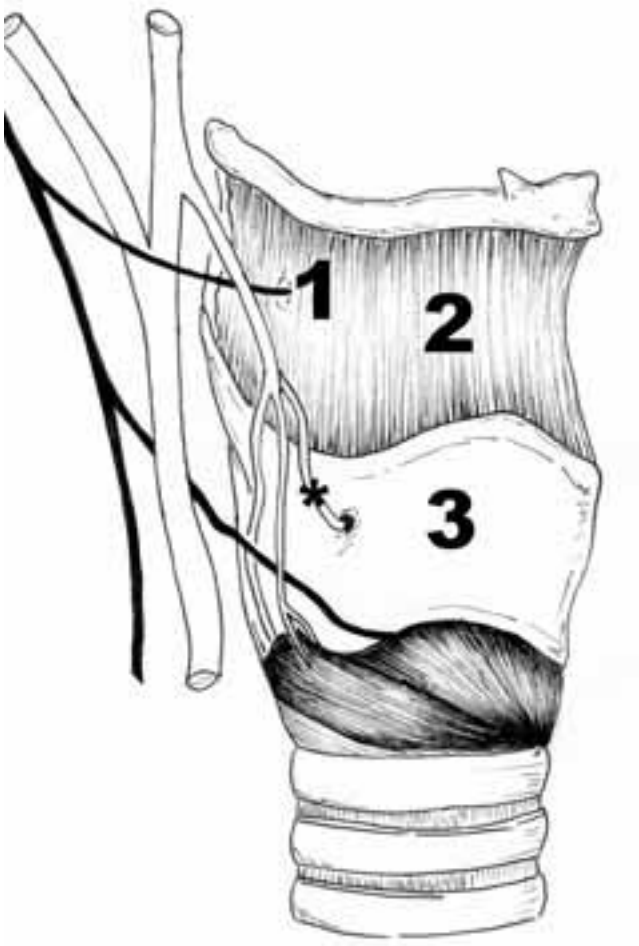


**Figure 2.** Schematic drawing of the laryngeal region. (**1**) superior laryngeal nerve, (**2**) thyrohyoid membrane, and (**3**) thyroid cartilage. **Asterisk** - abnormal branch of the superior laryngeal artery.

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