


A RARE ANATOMICAL VARIATION: DOUBLE RECURRENT LARYNGEAL NERVE

NADİR BİR ANATOMİK VARYASYON: ÇİFT REKÜRREN LARİNGEAL SİNİR

 MURAT ÖZGÜR KILIÇ¹

¹ Department of Surgical Oncology, Eskişehir City Hospital, Eskişehir, Turkey

Dear Editor,

Thyroidectomy is a common surgical procedure in the world, and is highly prone to complications since it is carried out in a narrow anatomical area where many important and vital structures are located. Recurrent laryngeal nerve (RLN) injury is one of the most feared situations related to this surgery, with a reported risk of 1-2%, even in experienced hands (1). This unwanted complication may result in different morbidities from mild voice changes to life-threatening respiratory distress (2). One of the reasons for this complication is that the RLN may have many anatomical variations. Herein, a rare case of double RLN in a female patient who underwent thyroidectomy for benign multinodular goiter was presented.

A 43-year-old woman presented to the surgical oncology outpatient clinic due to painful swallowing, difficulty in breathing, and anterior neck swelling for about three years. Her physical examination revealed palpable masses in both lobes of thyroid gland. Her medical and surgical histories were unremarkable. Ultrasonography demonstrated bilateral solid and hypoechoic nodules, among which the largest one was 42x23 mm in size. Thyroid function tests were in normal limits, and fine needle aspiration biopsy of the dominant nodule was reported as benign. After obtaining informed consent and completing preoperative preparation, total thyroidectomy was performed for multinodular goiter. During the operation, two parallel trunks of the left RLN were observed obliquely and posterior to the inferior thyroid artery (Figure 1). The course of the double trunk of the RLN was then dissected along the tracheoesophageal sulcus to clarify that they are separate nerves and to avoid any injury. Nerve monitoring could not be used in the operation because the reimbursement of social security insurance was limited to malignant or recurrent cases. That is why the case could only be documented by intraoperative photography. Thereafter, total thyroidectomy was successfully completed. The postoperative course was uneventful, and the patient

was discharged on the 2nd day. She was also informed for publication, and a consent was taken from her.



Figure 1. Intraoperative appearance of double trunk of the left RLN (White arrows) after cutting of inferior thyroid artery and removal of the left thyroid lobe (the trachea is retracted medially). T: Trachea, SCM: Sternocleidomastoid muscle

In usual anatomy, the RLN leaves the vagus nerve in the upper mediastinum, then moves upward in the tracheoesophageal sulcus, and finally enters into the larynx just lateral to the Berry ligament. However, many anatomical variations associated with RLN can be encountered, especially on the right side. The relationships between RLN and inferior thyroid artery, various types of branching before entering the larynx, and the existence of the non-recurrent morphology are among the most common variations, almost all of which occur during the embryonic period (3). Besides, abnormalities in the external morphology of RLN itself are quite uncommon conditions. Among those, double RLN is an extremely rare anatomical variation with limited number

Corresponding author: Murat Özgür Kılıç

E-mail: murat05ozgur@hotmail.com

ORCID: 0000-0002-2668-7555

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of reported cases in the literature (1,4). Some authors reported that the second RLN may have a thin structure, and surgeons should search the larger "true" RLN (5). In the present case, both trunks of the RLN were of thick structure, similar to the previous reports (1,4).

Although anatomical abnormalities of RLN were most often observed on the right side, our patient had double RLN on the left side. Similarly, Manoğlu et al reported left-sided double RLN in their case study (1). The authors also performed a wide dissection to assess whether the second

nerve is a branch or separate course. Our patient was operated on a benign multinodular goiter that did not require extensive dissection or central lymph node dissection. Hence, RLN was sufficiently dissected along the tracheoesophageal sulcus to assess its course.

In conclusion, complete visualization of RLN should be a mandatory part of thyroidectomy to evaluate the anatomical abnormalities and to minimize the related complications. In addition, surgeons should be aware of all variations of neural structures, including double RLN.

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