Anatomic variations of the non-recurrent inferior laryngeal nerve

Mehmet Uludag, 1 Adnan Isgor, 2 Gurkan Yetkin, 3 and Bülent Çitmez 1

1Department of 2nd General Surgery, Istanbul Etfal Training and Research Hospital, Etfal Sokak No:1, Istanbul 34360, Turkey
2Golden Horn University Health Sciences Institute, Akşaray, Istanbul, Turkey
3M Uludag. Email: dmyuludag@hotmail.com

Copyright 2009 BMJ Publishing Group Ltd

DESCRIPTION

The non-recurrent inferior laryngeal nerve (NRILN) is a rare anomaly (0.5–0.6% on the right side, extremely rare on the left side (0.004%)), which increases the risk of damage to the nerve during surgery. The right NRILN is associated with a right subclavian artery arising directly from the aortic arch. The left NRILN is associated with situs inversus.1,3

The origin of the NRILN is cervical. Three types can be distinguished: type 1 NRILN arises directly from the vagus and runs together with the vessels of the superior thyroid pedicle; type 2A (fig.1) NRILN follows a transverse path parallel to and over the trunk of the inferior thyroid artery; and type 2B (fig.2) NRILN follows a transverse path parallel to and under the trunk of the inferior thyroid artery.2

During thyroid and parathyroid surgery, the best way to avoid morbidity is to identify the nerve on both sides with a systematic dissection based on usual anatomic landmarks. When the inferior laryngeal nerve is not found in a classic position, the presence of a non-recurrent nerve is suspected. Any transverse bond should not be cut between the carotid artery and larynx except the middle thyroid vein. If the presence of the non-recurrent nerve is unknown, nerve injury can easily occur during surgery. Therefore, awareness of their existence and anatomic variations and correct surgical technique will prevent the surgeon from accidentally damaging the NRILN.

Footnotes

Competing interests: none.

Patient consent: Patient/guardian consent was obtained for publication.

REFERENCES


Figures and Tables
Right lateral view from a patient with non-recurrent laryngeal nerve (NRLN) undergoing thyroidectomy toxic multinodular goitre. The NRLN arises directly from the cervical part of the nerve (N) vagus and follows a transverse path parallel to and over the trunk of the inferior thyroid artery (ITA). The NRLN is divided into the two branches before passing to the ligament of Berry.
Right lateral view from a patient with non-recurrent laryngeal nerve (NRLN) undergoing thyroidectomy for recurrent goitre. The NRLN arises directly from the cervical vagus and follows a transverse path parallel to and under the trunk of the inferior thyroid artery (ITA).