



## Non-Recurrent Laryngeal Nerve – An Aberrant Encountered at Thyroidectomy

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### Letter to the Editor

The recurrent laryngeal nerve arises from the vagus and winds around the ligamentum arteriosum on the left and the subclavian artery on the right. This descent into the thorax and its looping path is responsible for its nomenclature-the recurrent laryngeal nerve. When there are fourth arch anomalies occur, we encounter the Non-Recurrent Laryngeal Nerve (NRLN). At near total thyroidectomy for a multinodular goiter, while dissecting close to the inferior thyroid pedicle, we observed a transverse nerve twig (Figure 1); superior and superficial to the right inferior thyroid pedicle (Type 2a). The NRLN occurs in 0.3% to 0.8% of the population, often on the right side and extremely rarely on the left side. There are 3 variants of the NRLN –Type 1 occurs where it arises from the vagus and travels with the superior thyroid pedicle. Type 2A, is where it travels parallel and superficial to the inferior thyroid artery while Type 2B is where it traverses parallel and deep to the inferior thyroid artery. It was first discovered by Steadman in a cadaver dissection. During embryological development, ILN originates from VI brachial arch, with vagus nerve under the same VI aortic arch and in a horizontal course. Subsequently, the V and the distal portion of the VI aortic arches regress bilaterally and the two laryngeal nerves remain anchored to the structures that develop from the IV arch (subclavian artery on the right and aortic arch on the left). During their descent into the thorax, these arteries take with them the nerves that assume, therefore, a recurrent course. So the NRLN develops when the fourth arch involutes instead of developing into the right subclavian artery. So the right laryngeal nerve arises in the neck and runs directly to the larynx. The right subclavian now arises from the left side of the arch of aorta and runs posterior to the esophagus, causing dysphagia lusoria (Bayford-Autenrieth Dysphagia) [1]. NRLN on the left side is often associated with dextrocardia or situs inversus. Intra operative nerve monitoring is ideal to identify these aberrant nerve paths. Dolezel reports that the use of IONM increased the prevalence of NRLNs yet decreased the incidence of postoperative nerve palsy [2,3]. Most of the large data series have been reported from cadaveric dissections. In resource poor countries, where intra operative nerve monitoring is not routine, a high degree of vigilance is necessary to avoid inadvertent injury during surgery.

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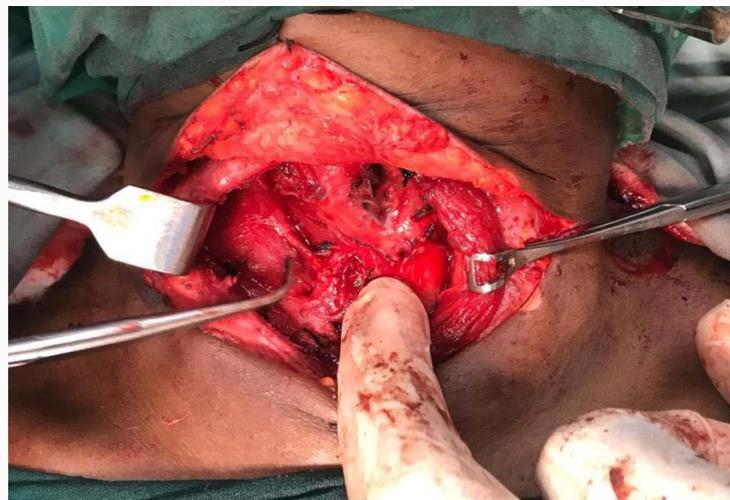


Figure 1: Transverse nerve twig.

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