



## A commentary on “Mechanisms of recurrent laryngeal nerve injury near the nerve entry point during thyroid surgery: A retrospective cohort study” (Int J Surg 2020; 83:125–130)

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#### Dear Editor,

The thyroid gland is surrounded by the middle layer of the deep cervical fascia, the pretracheal fascia which splits to form a capsule to enclose the thyroid gland. The thyroid capsule faces the deep layer of the superficial cervical fascia of the strap muscles anterolaterally, the carotid sheath posteromedially, and the trachea posteriorly. This capsule is strongly condensed around the cricoid cartilage and upper tracheal rings into the posterior suspensory, or Berry's ligament. Between these fasciae lie various vascular structures and the recurrent laryngeal nerves (RLNs) [1].

Thyroidectomy involves dissection along its capsule while preserving critical structures such as the RLNs and the parathyroid glands. The laryngeal entry point (LEP) of RLNs is important for several reasons. It is usually located around the inferior and medial border of the inferior constrictor muscle and approximately 1 cm below and just anterior to the inferior cornu of the thyroid cartilage which can be palpable during operation. The LEP is the most constant and medial point in their notoriously variable courses of RLNs. Several studies have reported that most RLN injuries occurred near the LEP. However, little attention has been paid to prevent these injuries. Liu et al. [2] performed a retrospective cohort study to determine the mechanisms of RLN injuries near the LEP. They found that traction and compression injuries occurred most frequently which would eventually recover. Excessive stretching of the thyroid lobe played an important role in the occurrence of RLN injuries near the LEP.

The key to avoid and reduce RLN injuries should focus on prevention using the following methods: 1) improvements in preoperative examination which can be used to preoperative assess in advance the difficulty of surgery in predicting the likelihood of injury; 2) proficiency in the anatomy and variations of RLN as the key to avoid injury is to correctly identify and safely dissect the RLN during operation; 3) performance of operation by professionally skilled surgeons as full exposure and clear surgical field ensure safety. The avoidance of use of electric knives or electric coagulation close to the nerves to ensure that injuries will not occur in dissecting, clamping, resecting and suturing. Also nerve compression due to postoperative bleeding should be avoided.

Intraoperative neuromonitoring of RLN has brought the following

benefits: significantly reducing iatrogenic RLN injuries, increasing surgical safety, improving identification of RLN, and accelerating intraoperative RLN identification [3,4]. However, it cannot substitute for detailed knowledge of neuroanatomy, intraoperative visual identification of RLN and precise surgical techniques. Improper use of monitoring equipment to identify the never can cause complications, for example, excessive stimulated currents could cause skin burns.

Despite the small number of included patients, this study brought new insights into the mechanisms of RLN injuries during thyroidectomy. Further well-designed studies should be conducted to confirm these findings in patients populations with different risk factors.

“Provenance and peer review

Commentary, internally reviewed”

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#### If you are submitting an RCT, please state the trial registry number – ISRCTN

None.

#### Author contribution

Junyong Chen-data analysis and writing.  
Zhi Tang-study design and language edit.

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## Guarantor

Junyong Chen.

## Declaration of competing interest

We have no conflicts of interest.

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