

Nerve identification technique during thyroid removal associated with fewer complications

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During thyroidectomy (surgery to remove the thyroid gland), the technique surgeons use to identify an important nerve appears to make a difference in terms of complications such as impairment of the parathyroid glands (which make a hormone that controls calcium levels), according to a report published Online First today by *Archives of Otolaryngology–Head and Neck Surgery*.

According to background information in the article, thyroidectomy is a common operation, but it can be associated with serious complications: paralysis of the recurrent laryngeal [nerve](#) (RLN, a nerve that transmits motor function and sensation to the larynx, or voice box) and hypoparathyroidism (caused by injury to the [parathyroid glands](#)).

Unintentional damage to the RLN by this surgery is reported to cause nerve paralysis in one percent to two percent of cases. Extensive searching for the RLN during [thyroid](#) surgery may cause temporary or permanent hypoparathyroidism. The authors note two methods of identifying the RLN: one approach locates the nerve where it enters the larynx (superior-inferior direction), and the other approach locates the nerve in the trachea-esophageal groove, and traces it in the superior direction (inferior-superior direction).

Bayram Veyseller, M.D., from Bezmialem Vakif University, Istanbul, Turkey, and colleagues conducted a study to compare both techniques. They studied patients undergoing partial or total thyroidectomy between January 2006 and August 2009. In 67 patients, the superior-inferior RLN identification technique was used, and in 128 patients, the inferior-

superior method was used, according to the attending surgeon's preference. Researchers evaluated patients' vocal cord function and blood calcium levels on the first day after the surgery. Follow-up was conducted every three months until patients' calcium levels improved, for an average of 26 months. If at the one-year mark blood [calcium levels](#) were still low (a sign of hypoparathyroidism) or RLN paralysis did not improve, the conditions were considered permanent.

Permanent paralysis of the RLN occurred in two patients in the inferior-superior group, and none in the other group. Hypoparathyroidism among the superior-inferior group patients was temporary in four and permanent in none; among the inferior-superior group patients, 14 experienced temporary hyperthyroidism and four experienced permanent hypoparathyroidism. Overall, significantly fewer complications were found in terms of RLN paralysis and hypoparathyroidism in the superior-inferior group.

"Significantly lower rates of RLN [paralysis](#) and hypoparathyroidism were observed in thyroidectomies using a superior-inferior approach," the authors concluded. They added that more studies should be conducted to corroborate these results.

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