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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