The Role of Intraoperative Neuromonitoring of Recurrent Laryngeal Nerve during Thyroidectomy: A Comparative Study on 1000 Nerves at Risk

Content

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BACKGROUND: The role of intraoperative neuromonitoring of recurrent laryngeal nerve (RLN) during thyroidectomy has not been well established. The present study evaluates whether RLN injury can be reduced by the application of this technique during thyroidectomy in a single center.

METHODS: Of 1000 RLNs that were at risk of injury in 639 consecutive patients who underwent thyroidectomy, the outcome of 501 RLNs with the use of neuromonitoring was compared with that of 499 nerves that were operated by routine identification only. The incidences of RLN paralysis were compared between the 2 groups and the assigned risk subgroups.

RESULTS: Postoperative palsy was identified in 47 RLNs (4.7%), with complete recovery in 37 of 44 RLNs (84%) without documented injury. The overall incidence of postoperative RLN paralysis was significantly higher during thyroidectomy for malignancy (P = .025) and secondary thyroidectomy (P = .017). There was no significant difference in postoperative, transient, and permanent paralysis rates between the neuromonitoring and control groups. In subgroup analysis, the postoperative RLN palsy rate was higher during reoperative thyroidectomy (19% vs 4.6%; P = .019) in the control group but not in the neuromonitoring group (7.8% vs 3.8%; P > .05).

CONCLUSION: Neuromonitoring of the RLN during thyroid surgery could not be demonstrated to reduce RLN injury significantly, compared with the adoption of routine RLN identification. However, its application can be considered for selected high-risk thyroidectomies.