

KIMMO HUJALA, MARJA KOIVU,
KIMMO MÄKINEN, JAANA
ISOJÄRVI, MARJUKKA MÄKELÄ,
TAPANI KERÄNEN

TAPANI KERÄNEN
Docent, Chief Physician
National Institute of Health and
Welfare, FinOHTA
E-mail: tapani.keranen@thl.fi

Neuromonitoring of the recurrent laryngeal nerve during thyroid and parathyroid surgery

Background

Recurrent laryngeal nerve (RLN) injury is the most well-known complication of thyroid and parathyroid surgery. RLN innervates the intrinsic laryngeal muscles, and injury of the nerve causes vocal chord palsy. Permanent RLN injury has been reported to occur in 0.3–2.4% of cases operated on due to benign thyroid and parathyroid disorders. In Finland annually approximately 2800 patients and 3500 RNSs are at risk. The gold standard method for preventing RLN injury during thyroid and parathyroid injury is the routine visual identification of the nerve. Intraoperative neuromonitoring (IONM) has been proposed to help in the identification of the RLN and, thus, reduce the risk of nerve injury. Internationally, IONM is widely used by surgeons in thyroid and parathyroid surgery. In this MUMM (Managed Uptake of Medical Methods) systematic review, we evaluated the usefulness of IONM in the prevention of vocal fold palsy during thyroid and parathyroid surgery.

Methods

A systematic literature search was run on Medline (via OVID and PubMed), the Centre for Reviews and Dissemination databases (HTA, NHS EED, DARE), the Cochrane Database of Systematic Reviews and the Cochrane Central Register of Controlled Trials. ClinicalTrials.gov and WHO International Clinical Trials Registry Platform were searched for ongoing trials. For the purposes of this systematic review, prospective randomized clinical trials (RCT), with at least 30 patients, and with at least six months of follow-up time, were analyzed. Furthermore, four published systematic reviews on the subject were analyzed. The final analysis included three RCTs. The number of patients in these trials varied from 72 to 1000.

Results

Permanent recurrent nerve injury after thyroid or parathyroid surgery was identified in 0.8–1.5% of the cases in the RCTs. No difference in the incidence of the injuries was observed between the IONM and control groups (visual identification of the recurrent nerve).

Conclusions

As compared with visual identification of the recurrent nerve, IONM does not reduce the risk of recurrent nerve injury during thyroid and parathyroid surgery. Results from observational studies have suggested that IONM may have a place in some special situations, such as cancer surgery and reoperations. As a method IONM is safe.

