

## **STAGING TOTAL THYROIDECTOMIES: DOES INTRAOPERATIVE NERVE MONITORING APPROPRIATELY PREDICT POST-OPERATIVE RECURRENT LARYNGEAL NERVE FUNCTION?**

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**Background/Purpose:** Total thyroidectomies(TT) and central compartment surgery present a significant risk of bilateral vocal cord paralysis. We hypothesize that intraoperative neuromonitoring (IONM) is an effective tool in providing intraoperative decision for staging these procedure to avoid risk of bilateral of recurrent laryngeal nerve (RLN) injuries.

**Methods:** A retrospective review of prospectively collected database identified all patients who underwent thyroid and central neck surgery by one surgeon in an academic institution. We collected intraoperative data on all patients including ones who underwent a staged procedure based on RLN integrity testing using IONM.

**Results:** Eleven procedures (2.6%) of 420 elective procedures were staged based on IONM. Patients included six patients with advanced cancer, and five with huge substernal goiters. Three cancer patients had complete loss of signal after central dissection. The average drop in amplitude in the remaining eight patients was  $169 \pm 12.7$  mV.

The true positive rate was 36.4% with four out of the eleven patients had confirmed unilateral vocal cord paralysis.

**Discussion & Conclusion:** Intraoperative persistent drop or loss of IONM signal can predict RLN stretch and ipsilateral vocal cord dysfunction. In select group of high-risk patients, IONM can be a useful tool for intraoperative decision to stage thyroid and central compartment surgery to avoid bilateral RLN injury. These highly significant findings warrant further investigations.