

# Volume and outcome correlates in the learning curve of a complex technology: continuous neural monitoring guided thyroid surgery at a tertiary surgical center

**Contact name:** Schneider, Rick

**Institution/company:** Department of General, Visceral and Vascular Surgery.Martin Luther University, Halle-Wittenberg

**Phone:** 958536820

**Country:** GERMANY

**E-mail:** rick.schneider@uk-halle.de

**Type of communication:** ORAL

**Number Abstracts:** 180

**Area:** 5. General topics on endocrine surgery: Neuroendocrine tumors.

Rick Schneider Department of General, Visceral and Vascular Surgery.Martin Luther University, Halle-Wittenberg; Malik Elwerr Department of General, Visceral and Vascular Surgery.Martin Luther University, Halle-Wittenberg; Claudiu Pfeiffer Department of General, Visceral and Vascular Surgery.Martin Luther University, Halle-Wittenberg; Ilker Satiroglu Department of General, Visceral and Vascular Surgery.Martin Luther University, Halle-Wittenberg; Henning Dralle Department of General, Visceral and Vascular Surgery.Martin Luther University, Halle-Wittenberg; Kerstin Lorenz Department of General, Visceral and Vascular Surgery.Martin Luther University, Halle-Wittenberg

## **Abstract body (should contain maximum 300 words)**

Purpose: Continuous intraoperative nerve monitoring (CIONM) provides superior monitoring of the functional status of RLN. It is increasingly acknowledged as a useful tool to recognize impending nerve injury to abort the related maneuvers and thus to prevent nerve injury during thyroid surgery. Methods: All patients with intact preoperative RLN function who underwent thyroid surgery between January 2011 and June 2018 under CIONM were included in this observational study conducted at a tertiary surgical center. Results: There were 2939 patients with 4935 NAR. Vocal fold palsy (VFP) rate at the 2nd postoperative day was 1.5 % (75 NAR); 8 of whom (0.16 %) were false negative. Permanent VFP rate was 0.02 % (1 NAR). After a 2-year period standardly using CIONM a considerable decrease of VFP rate at 2nd postoperative day (5.6 % to 1.2 %) was observed. After loss of signal (LOS), a continuously increasing number in NAR with intraoperative recovery of electromyographic signal with incomplete palsy or even intact vocal fold function was documented. False negative events were rare, and of temporary nature; however no criteria were identified to predict these. Conclusions: CIONM is a complex technology with convincing merits when used in a high volume practice, demonstrating a learning curve of CIONM application during thyroid surgery. Growing experience with CIONM enables the surgeon to identify impending nerve injury as it unfolds, release distressed nerves be reversing causative maneuvers, and verify functional nerve recovery of after LOS with evidence of improved outcome even in experienced surgeons` hands.