

RECURRENT LARYNGEAL NERVE MONITORING VIA CONTINUOUS VAGAL NERVE STIMULATION DURING THYROID SURGERY

Ifeacho, Sonna¹; Nash, Robert¹; Mochloulis, George¹

¹Lister Hospital, East & North Hertfordshire NHS Trust, Stevenage, Hertfordshire, United Kingdom (Great Britain)

Background/Purpose: Continuous recurrent nerve monitoring is an emerging technique proving valuable in reducing the incidence of post-operative temporary and permanent recurrent laryngeal nerve palsy.

Methods: Automatic periodic vagal nerve stimulation was used to continuously monitor the recurrent laryngeal nerve during thyroid surgery. Prior to dissection of the thyroid gland, lateral dissection of the neck was performed for identification and placement of an electrode probe on the vagus nerve. 1mA currents stimulated the vagus nerve at 2ms intervals. Continuous audible and colour-coded visual feedback were displayed and recorded on an attached monitor.

Results: Data was recorded for 50 recurrent laryngeal nerves. All were female, within the age range 30-82 years. Warning signals of impending recurrent laryngeal irritation were recorded for more than 30% of cases. There were no cases of temporary or permanent recurrent laryngeal nerve injury.

Discussion & Conclusion: The use of continuous intra-operative nerve monitoring during thyroid surgery not only serves as a warning of irritation of the nerve, but also provides insight into the exact mechanism of intra-operative injury to the recurrent laryngeal nerve, for example traction injury, thermal damage or compression injury. This provides an immediate opportunity to adjust surgical technique intra-operatively and therefore reduce the rate of temporary or permanent nerve damage.

Our study demonstrates that recurrent laryngeal nerve monitoring via continuous vagal nerve stimulation is a beneficial adjunct during thyroid surgery and serves as a useful indicator of impending nerve damage.