

## **LARYNGEAL NERVE MONITORING: EVOLVING STANDARDS & TECHNIQUES**

Kartush, Jack.

Michigan Ear Institute, Bloomfield Hills, MI, USA.

**Background/Purpose:** Intraoperative nerve monitoring has evolved as a standard of care for many surgical procedures as a means to reduce neurologic injury.

In recent years, monitoring has also been applied to thyroid surgery in an attempt to reduce the risk of recurrent laryngeal nerve (RLN) injury. However, the potential benefits of monitoring in thyroid surgery have been far less clear.

This presentation will outline the weaknesses and pitfalls of current RLN monitoring techniques as well as present a summary of new techniques intended to enhance the accuracy and safety of monitoring during thyroid cancer surgery.

**Methods:** The surgical, neurophysiologic and legal aspects of monitoring gleaned from thousands of monitored cranial nerve cases over the last 30 years will be extrapolated to RLN monitoring. New methodologies will be described.

**Results:** Any surgeon using neuromonitoring must understand the key fundamentals of intraoperative testing to maximize its benefits and minimize the risk of breaching neurophysiologic standards of care. The most common technical and interpretive monitoring errors will be presented in order to minimize false positive and negative errors during thyroid surgery.

**Discussion & Conclusion:** While monitoring is not a substitute for anatomy and experience, the ability to identify motor nerves and detect microtrauma can assist even the most skilled surgeon, particularly when normal anatomic landmarks are obscured by disease, tumor or radiation changes. This presentation provides the foundation for thyroid surgeons to maximize the benefits of RLN monitoring.