It’s known that thyroid surgery to be associated with a high risk of complications. The main of them is paresis of the vocal folds due to a disturbance of the nerve impulse along the return laryngeal nerve. So many surgeons consider an operation on thyroid gland an operation on the recurrent laryngeal nerve. Surgery technique has been improved since the end of 19th century. Currently, extensive experience with use of neuromonitoring has been accumulate in adults.

The aim of our study was to evaluate effectiveness of intraoperative neuromonitoring of the recurrent laryngeal nerves in operations on the thyroid gland in children. Below the tasks that needed to be perform.

The principle of the method is to install electrode on the endotracheal tube and vocal folds and apply an electrical impulse to the recurrent laryngeal nerve and nervus vagus using probes during the operation. In the case of a normal state of the nerve, the signal passes and is displayed visually on the screen and in form of audio signal. If the nerve injury occurs, even insensible visually, this will be displayed on the monitor.

The study included 57 children aged 7 to 17 years who underwent thyroid surgery using neuromonitoring and obligatory pre and postoperative phoniatric monitoring and video endoscopy of the larynx. Most children are operated on for nodular goiter and thyroid cancer. There was hemithyroidectomy and total thyroidectomy performed. Surgery was supplemented lymph node dissection in 18 children.

We obtained unexpected results during the study. This is a significant number of unilateral vocal folds paresis, without clinical manifestation due to compensation of the opposite side ligament movements. Only phoniatric examination and fibrolaryngoscopy allowed confirm them in few days after operation. In all cases, neuromonitor recorded a decreasing of electrical impulse along the return laryngeal nerve and vagus already during the operation. But further examination was more optimistic. We can say that in all cases, there was recovery of the vocal folds movements. Less than 3% of the paresis can persist, which is not confirmed by an objective study, because 2 of our patients did not appear for a control examination.

In conclusion, we propose in pediatric practice to refuse total thyroidectomy in case with absence of conduction along the return laryngeal nerve after one lobe removal and finish the treatment, that is to say remove the thyroid gland after eliminating paresis or choose another method, for example, radioiodine therapy in case of Graves’ disease.