

Neuromonitoring

It is known that one of the most significant complications in thyroid and parathyroid glands surgery is the injury of the laryngeal nerves. These nerves, anatomically speaking, are very close or in contact with the aforementioned endocrine glands. Therefore, their injury if it is one-sided causes hoarseness to the voice, if it is both-sided leads to aphonia and difficulty in breathing, with or without tracheostomy. These damages may be temporary or permanent.

Thus, the protection of the nerves that move the vocal cords is of vast importance. Efforts of monitoring the laryngeal nerve started taking place during the 1970s, but **today we have at our disposal a state-of-the-art electronic monitoring and registration system of the laryngeal nerve.**

More precisely, special electrodes are initially placed by the Anaesthesiologist, on the trachea, which internally touch the vocal cords. During the operation, the Endocrine Surgeon, by stimulating the nerve with a special prod, causes the movement of the specific vocal cord, which leads to a warning sound signal and the registration of a special waveform on the monitor. This way, the Neuromonitoring Technologist, who is present throughout the operation beside the medical team, confirms the successful signal and therefore, the smooth operation of the nerves and the vocal cords.

Dr Karvounis, having long experience, is among the pioneers in Greece that introduced on a wide scale the use of neuromonitoring in Endocrine Surgery. He applies this method in **ALL** his operations.

At our Centre, we apply either **intermittent neuromonitoring** or **continuous neuromonitoring**. With the latter we have continuous registration of the nerves' signal for the vocal chords throughout the operation.

It is necessary that we note that the route of every laryngeal nerve and the risk of its injury depends on different factors, such as a) the particular anatomy of each patient, b) the “anatomical variations” with completely irregular location, c) the unregulated manner in which a nodule/tumour/lymph node of the thyroid has spread, d) in re-surgery, the complete upsetting of the anatomical architecture, due to the inevitable symphysis.

Therefore, the patient needs **TWO IMPORTANT PREREQUISITES**: I) the aid that the neuromonitoring machine offers, AND II) the experienced specialist surgeon who, on one hand, has to be able to realise the anatomical peculiarities-“traps” of the particular patient, and on the other, **to have the proper knowledge to interpret the type of signal that is provided each time by the neuromonitoring method.**