Neck dissection

There are numerous questions that patients tend to ask before neck dissection

What is neck dissection?

It is the type of operation where lymph nodes are removed, often suspect or confirmed of being metastatic, in cases of thyroid malignancy.

Following the international guidelines, it might – **in case of thyroid malignancy – be performed either with the total thyroidectomy or on its own, in cases of the disease relapsing.**

When is neck dissection performed?

Thyroid cancer (mainly of the papillary and medullary type) might break through the capsule (the enclosure) of the thyroid gland and spread in the anatomically neighbouring area. Through a network of lymphatic vessels, the neoplasmatic cells can disperse, initially to the lymph nodes closer to the thyroid (central) and next to the more distant cervical lymph nodes (lateral). There is then the need for clearing (removing) the lymph nodes, which will be sent for histological examination.

Does the cancer invasion of lymph nodes cause symptoms?

Unfortunately, in the large majority of the cases, **the patient feels absolutely no warning symptom**. Moreover, in most cases, **no visible swelling on the neck can be observed**.

Therefore the clinical palpation, but mainly the ultrasound, is going to provide us with the necessary information.

Are there medical tests that inform us about lymph nodes?

The ultrasound is a necessary pre-operative examination of the patient, which the surgeon must have. The radiologist usually informs us in his medical report of the thyroid ultrasound whether he sees any pathologically swollen lymph nodes or not.

A suspicious lymph node can be punctured and its cytological provides us with information on whether it has been invaded by cancer or not. However, there are many cases where the suspicious ultrasound imaging alone of the lymph nodes leads straight to surgery, without the need for puncturing.

In cases of confirmed thyroid malignancy, we optionally choose for additional ultrasound mapping of the lymph nodes by a Diagnostic Medical Physicist (in communication with our Secretariat).

Are all the lymph nodes that we remove cancerous ?

The Endocrine Surgeon must clear the anatomical region from all adipose tissue and lymph nodes. The examination of such material under the microscope will show us in the end if and how many of these lymph nodes were metastatic. It is self-evident that the removal of normal lymph nodes has absolutely no repercussions on the human organism.

What types of neck dissection are there?

We discern two types of operations

a. Central neck dissection
b. Lateral neck dissection (one- or two-sided)

Is it a difficult operation?

Neck dissection (especially the lateral type) is the most difficult type of surgical operation to the neck.

The specialist surgeon, with great care and fine surgical handling, has to remove the lymph nodes, which are literally "tangled" in anatomical structures that are invaluable to our organism. Thus, one the one hand a radical surgical clearing must be made, while on the other hand, the noble structures of the neck, such as the parathyroid glands, the recurrent laryngeal nerves, the carotid arteries, in inner jugular veins, the major thoracic duct to the left, the minor one to the right and important nerves such as the vagus nerve, the phrenic nerve, the hypoglossal nerve, the accessory nerve, the brachial plexus and the cervical plexus.

Is there a Special Surgeon for this operation?

Clearly, a neck dissection should ideally be performed by a specialised endocrine surgeon.

On the one hand, due to the fact that the main aim is the **complete, radical clearing** of the malignant disease (Oncological character of the operation).

On the other hand, because it is necessary to **minimise the possibility of serious, as mentioned in literature, complications**, such as hematoma, nerve damage, trachea-oesophagus injury, injury to the parathyroid glands, pneumothorax, air embolism, chylous fistula, surgical incision inflammation, skin flap necrosis.

How long does the operation last? What kind of anaesthesia is required and how is my recovery?

For the central neck dissection, the same apply as for the simple, total thyroidectomy.

For the **lateral** neck dissection, which is an operation with several orders of magnitude higher difficulty, there may be some differentiations. The anaesthesia is of course general and safe. The operation may last 3 or more hours, depending on the extent of the disease and the surgical difficulties presented by each patient. The surgical incision will of course be somewhat longer and it will extend in such way in order, on the one hand, to allow the Surgeon to gain anatomical access to the suspicious lymph nodes and on the other hand to have the best aesthetic outcome after it is healed. The possibility of placing a drainage tube (in contrast to what we do in simple thyroidectomy operations) is higher, but it is removed (painlessly), usually 1-2 days later. The eventuality of blood transfusion is extremely rare.

After the operation, the patient speaks, eats lightly and can move on the same day. There is no notable pain, but we do administer however plain paracetamol (Depon), which most patients do not have to continue at home. The duration of hospitalisation, in the large majority of cases, is one to two days.

Are there modern techniques and tools for the operation?

The neck dissection operation is an oncological operation,

during which the main and fundamental aim of the surgeon is the radicality of the clearing. We strive daily to achieve the aforementioned target, all the while tending, with equally intense interest to the “secondary” elements, such as the best possible aesthetic result and the painless, quick recovery of our patient. This is achieved by taking advantage of elements and principles of the *minimally invasive surgery*, but not at the expense of the radicality.

Continuous pre-operative ultrasonic mapping of the neck, often with imaging re-check in the operating room (portable sonography), provide the information for a more complete, successful neck dissection, in case of malignancy.

Maximum surgical precision and efficiency in the dissection is achieved through ***radiofrequency*** and ***ultrasonic rays*** (***Ultracision***), instead of the traditional scalpel. Through the use of the aforementioned, modern dissection equipment, apart from the more thorough removal of the metastatic lymph nodes, the surgeon achieves better haemostasis and less post-operative pain.

Moreover, the speech of the patient is safeguarded through the use of ***neuromonitoring***. It is the *most revolutionary and impressively useful technique*, which warns the Surgeon and protects, with a high degree of safety, the patient from problem with the vocal chords. During lateral neck dissections the anatomical route of not only the laryngeal but also of the vagus nerves is revealed, providing the surgeon with a more complete image for the protection of the vocal chords.

At our Centre, we apply either **intermittent neuromonitoring** or **continuous neuromonitoring**. With the later we have continuous registration of the nerves’ signal for the vocal cords for the entire duration of the operation.

The use of video monitoring (**Video-laryngoscopy**) for controlling the mobility of the vocal chords, offers us yet

another safety measure for preserving their integrity.

During the demanding surgical operation that is the neck dissection, special equipment bearing precision magnifying lenses (**surgical loops**) provide the surgeon with a surgical area of higher detail. Special, moreover, continuous operative preparation, sometimes undergoing the effort of marking them, aims at **checking and safeguarding the adjacent parathyroid glands**.

Will there be a scar on my neck?

Plastic reconstruction is applied at the end of the surgery. ***There are no sutures*** to remove*.* We take care so that the ***smallest possible incision (it is noted: without sacrificing the radicality of the clearing),*** is done *on the natural skin fold* (where skin makes a fold by itself) yielding a ***good aesthetic result***.

Mr Karvounis has developed this technique in particular, and moreover recommends special beauty concoctions, which achieve cellular reconstruction and provide for a beautiful and without scars skin.

When can I go back to work?

The recovery is usually quick and there is no particular pain. Many of our patients return to their job in the days following their discharge. Depending on the nature of their employment, others desire sick leave. *In the latter case, the doctor, in conjunction with the patient, determine the desired length of the sick leave*.

What if the biopsy after the operation shows malignant lymph nodes, will I have to take Iodine?

In the case where the histological report confirms the suspicion regarding invaded lymph nodes, we should not, even then, worry too much.

We take into account that the most common thyroid cancer (papillary) is ***one of the human organism's "best cancers"***. Even in the cases of invaded lymph nodes, it generally has very good prognosis.

After the evaluation of the histological report's findings, an initial discussion with the Surgeon takes place and it is decided – usually by the Endocrinologist – the therapeutic administration of Iodine or not.

Having no relation to typical chemotherapy and radiotherapy that are applied in other types of cancer, in the case of papillary thyroid neoplasia the intake of ***radioactive iodine pills*** and some scintigraphic measurements from the Nuclear Medicine Physician are enough. It is usually recommended avoiding contact with infants and pregnant women for a few days. In medullary thyroid carcinomas, the data is evaluated and an additional treatment is decided upon or not.

A timely, safe and thorough surgical operation is the first and most important step in the treatment approach of a malignancy in the thyroid.

What is the procedure of the lateral neck dissection operation?

A great effort is being made to simplify the procedure, so that there isn't even the slightest inconvenience for the patient. With all our associates, we aim at approaching each patient as a separate case, in a responsible and scientifically sound manner.

An ***initial surgical assessment*** is carried out in the premises of the clinic or a detailed communication over the telephone and eventual check of the results of the examinations sent via fax or e-mail.

Pointing out some basic elements for this particular type of operation, we would require:

1. A **vocal cords movement examination by an ENT** (Ideally by associated ENT- Phoniatrician, after communicating with our Secretariat)
2. A detailed **Lymph nodes mapping with ultrasound** (Ideally by associated specialist Radiologists, after communicating with our Secretariat)
3. **Timely scheduling with our Secretariat**, in order to ensure the required time in the Surgery Program, for a multi-hour, demanding operation.