

Parathyroid

Everything you need to know about parathyroid

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What are the parathyroid glands and what is their function?

The parathyroid glands are 4 small glands (the size of a lentil) that are located at the back of the throat, behind the thyroid gland.

Their function – through the production of a hormone called parathormone (PTH) – constitutes to **regulating the calcium balance** in our organism.

It is simply clarified that the “neighbours” in the anatomical sense, while their function is entirely different and independent from that of the thyroid.

How significant is their function?

Calcium balance is of paramount importance for the organism. This valuable element (**Calcium**) **is a fundamental element** for the function of – among others – **our nervous system** (the brain cells communicate among themselves thanks to calcium), for the function of **our muscular system** (the twitch/movement of the muscles takes places thanks to it) and for the strength and resilience of **our skeleton**.

What is the common disease of the parathyroid glands and what are the symptoms?

Hyperparathyroidism is the name of the most common disease, where *parathormone is overproduced uncontrollably and calcium rises dangerously* in the blood. Usually (approx. 90%), 1 in 4 parathyroid glands develops a tumour (parathyroid adenoma), while in the rest of the cases 2 out of 4 or even all 4 of the parathyroid glands may be ailing (**hyperplasia**).

The symptoms are **constant sense of fatigue, weakness, exhaustion, headaches, sleep disorders, depression, difficulty in concentrating, memory disorders, hair loss, gastroesophageal reflux.**

The high levels of calcium/parathormone in the blood cause **elevated blood cholesterol, increase the risk for stroke, cardiac arrhythmia, hypertension.** They cause **renal lithiasis** and osteoporosis that often leads in **skeletal fractures.**

Moreover, the high level of calcium increases the risk of **cancer in the breast, the rectum, the kidneys and the prostate.**

It is worth noting that a percentage of the patient with hyperparathyroidism does not feel any apparent symptoms and his quality of life has been adversely affected gradually without him being able to explain what the cause is for that, and feels unwell, in general. What is impressive with that category of patients is *the immediate and spectacular improvement of their daily lives and mood, following the removal of the ailing parathyroid gland.*

How is hyperparathyroidism diagnosed in a person?

It is a diagnosis that, up until recently, **often escaped** the attention of our family doctor. Nowadays the Endocrinologists, with a **heightened index of clinical suspicion**, often make the diagnosis in time and recommend its surgical treatment.

Oftentimes, mild symptoms with accompanying elevated or borderline calcium and parathormone values in the blood piece together constitute the first evidence for the diagnostic approach of the disease.

Is there a chance that the biopsy shows parathyroid cancer?

Parathyroid cancer is rare; hypercalcemia (if the ailing parathyroid has not been removed), **however**, is a factor that is deemed to be suspect of the development of cancer in other organs.

Why should I undergo surgery since I fell no intense symptoms?

Sustained high levels of calcium/parathormone in the organism are akin to a **"ticking bomb"**. The possible mildness of some symptoms in no way limits the development of the disease, with catastrophic repercussions to the heart, the brain, the kidneys and the skeleton.

When should I undergo surgery time-wise?Is it something urgent?

The **earliest possible resolution** of the problem relieves the organism of a disorder that affects millions of its cells, damaging its vital functions, often in an irreversible manner.

Is it possible to treat hyperthyroidism pharmaceutically?

There are currently pharmaceutical concoctions that bring about a temporary reduction in calcium levels (without them being free of side effects) and are many times recommended by Endocrinologists, until the patient can undergo surgery. The **definitive resolution of the problem** is the removal of the ailing parathyroid gland.

What exactly do we do during the operation?

The ailing parathyroid is sought out and removed by the Surgeon and usually the rest of the parathyroid corpuscles of normal morphology are sought out and preserved. During the operation, a **fast-track biopsy** is sent, which histologically confirms the success of the operation.

Can it be combined with the removal of the thyroid as well?

Of course a thyroidectomy and a parathyroidectomy can be carried out at the same time in one operation, **provided that both these organs**, which are anatomical neighbours, **are ailing**.

How difficult is parathyroid surgery?

It is an especially "delicate" operation, which is almost compulsory to be performed by a specialised Surgeon. **The main difficulty of this type of operation is mainly the locating of the ailing gland**. The physician is searching for a small tumour at the size of a lentil, which looks very much like the adjacent adipose tissue and the surrounding lymph nodes. And that is the most important reason why the Surgeon has to have worked in Tertiary Endocrine Surgery Centres, in order to have accumulated "condensed" experienced, from a large number of this type of operations. Moreover, the anatomical position of the ailing parathyroid in relation to the laryngeal nerves (vocal chords), the oesophagus, and the carotid make the aforementioned operation highly demanding.

Mr Karvounis, having built on the rich experience he accumulated on parathyroid surgery abroad, has had the scientific satisfaction of **performing re-surgery with absolute success in Greece**, on patients that had undergone one, two or even three initial, unsuccessful operations, during which the ailing parathyroid had, unfortunately, not been located and removed.

How long does the operation take?

It usually lasts **less than one hour**. However, if the process of locating the ailing gland necessitates it, the duration of the operation may be extended as needed.

What kind of anaesthesia is required?

Usually general anaesthesia. Moreover, based on certain criteria, **local anaesthesia** in conjunction with sedation may be applied.

Mr Karvounis, within the framework of the minimally invasive surgery that he applies, received a distinction for his clinical thesis entitled **“Minimally invasive parathyroidectomy under local anaesthesia”** E.Karvounis and J.Lynn, in an International Surgical Forum in 2002.

Who is the specialist for this operation – Is there a specialised surgeon for the parathyroid glands?

The specialist is the Endocrine Surgeon and – among them – him who **has focused in the scientific sense on neck endocrine surgery**, that is to say the endocrine glands of the neck and not of the abdominal region.

Are there new techniques for parathyroid gland surgery?

Parathyroid surgery is *nowadays* performed in various ways, *all around us*. One can come across, unfortunately often, the *traditional surgical* technique with the large incisions, the drainage tubes, and the long recovery.

Mr. Karvounis, Surgeon, applies the video camera assisted operation (***video-assisted parathyroidectomy***), as well as minimally invasive parathyroidectomy (***minimally invasive surgery***). It is a *modern and pioneering technique* that is applied *internationally with absolute success, in specialised centres of endocrine surgery*.

Instead of the *traditional scalpel and scissors*, the

dissection, the detachment of the ailing parathyroid gland and at the same time the haemostasis are performed with the use of **radiofrequency** and **ultrasonic rays (Ultracision)**. These are special, modern surgical tools that provide *maximum accuracy and efficiency, without causing damage to the tissue* and post-operative pain to the patient, as it happens with the traditional technique.

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 problems with the vocal chords. **A second safeguard** for the integrity of the vocal chords is achieved through **video monitoring (Video-laryngoscopy)** during the resuscitation of the patient.

Additionally, **the intraoperative parathyroid hormone monitoring (intraoperative PTH)** constitutes (for those Surgeons that have knowledge of it and in those Clinics that can support it technologically) a very important tool for the **absolute success** of the minimally invasive parathyroidectomy.

What is the intraoperative parathyroid hormone (PTH) monitoring method?

It is a **modern technique for the control and affirmation of the success of parathyroidectomy operation**, in real time during the operation. By applying a scientific protocol, the Surgeon is provided with information needed for the completion of the operation, knowing, before even the patient wakes up, of its total success.

Mr Karvounis, Surgeon, has the unique pleasure and honour of being the first Greek Surgeon, who published in the official scientific journal of the Greek Surgical Society, a **pioneering scientific study of his**, based on a large series of operation with the iPTH method, in London.

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How long must I be hospitalised for a parathyroidectomy?

24 hours or less. The patient arrives at the Clinic in the morning, the surgery is performed and by midday the I.V. is removed. ***Immediately after surgery he can speak, move about and by midday receives stable food.*** Having no I.V. or other tube in the neck, he can move about freely, remains in the Clinic for the night and exits in the morning of the next day.

In few cases, there is the possibility due to the removal of the ailing, hyperactive gland, that the post-operative reduction of the patient's calcium levels is spectacular. This, *if it happens*, confirms the success of the surgery in an impressive way, but it forces us, however, in hospitalising the patient for a second night, in order for his calcium levels to stabilise.

When and how will I eat after the operation?

The patient starts receiving food approximately 2 hours after the surgery. **The diet is free.**

Will I be able to speak I speak after the operation?

Of course. Immediately after the surgery is over, the patient speaks.

Will there a blood transfusion be needed?

No, there will be no blood needed, no blood donor is required.

Will I have a drainage tube after the operation?

No, with the particular surgical technique – in the vast majority of the patients – we do not place a drainage tube.

What are the complications of a parathyroid operation?

Depending both on locating the ailing gland and the patient's

anatomy, there is a different degree of difficulty of the aforementioned operation. The basic aim is initially locating the damage and then its safe removal, so that there is no haemorrhaging of or injury to the adjacent organs and anatomical structures. Undergoing the operation at the ***experienced hands of a specialised Surgeon*** and the use of the most ***modern technological equipment, increases the capacity for locating and removing the damage, and minimises any possibility of voice disorder.***

Will I be taking drugs on a permanent basis after the surgery?

No. The aim of the operation is that, post-operatively, the organism maintains the normal levels of calcium on its own.

Is the patient in pain after the operation?

No, with the particular surgical technique, there is no pain. *Actually, we do not even prescribe analgesics at the patient's discharge.*

Will there be a scar on my neck?

Plastic reconstruction is applied at the end of the surgery. ***There are no sutures.*** Nothing is removed. The ***impressively small incision*** is done ***on the natural skin fold*** (where skin makes a fold by itself) yielding an ***aesthetically perfect 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.

It is quite often according to our patients that a few days after the surgery are asked by their unsuspecting friends: "Where did you scrape yourself", instead "when did you have surgery", due to the microscopic, imperceptible scar!

Weeks or months after surgery, the patient himself has to greatly insist to convince the person that he is talking to

that he indeed underwent surgery, as the latter sees no scar.

When can I go back to work?

Whenever you want. *The recovery is rapid and there is no pain. The normal levels of calcium are the deciding factor for discharge. Many of our patients return to their job, the following day of their discharge. Others some desire sick leave. In the latter case, the doctor, in conjunction with the patient, determine the desired length of the sick leave.*

Might the issue recur after the operation?

The parathyroidectomy operation aims at removing the entire ailing parathyroid tissue. Therefore, in the large majority, there is no recurrence. There is however a small relapse percentage for which no initial forecast can be made.

Will my life change after the surgery?

The descriptions of the patients that report that **after the operation they were “reborn”** are impressive. The indefinable sense of fatigue and unspecified drop of the mood of the ailing patient vanish after the surgery. The patient often feels a pleasant change in his everyday life, in his mood and activity, and gradually problems that had possibly been created (e.g. osteopenia, lithiases).

What is the procedure for a parathyroidectomy operation?

The procedure has been very simplified, so that there isn't even the slightest inconvenience for the patient. For all our associates, it is a ***routine procedure***, which – in a friendly environment – aims 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. ***The operation with hospitalisation of less than***

24 hours follows and then, optionally, after one week, a **surgical re-evaluation** in the premises of the Clinic.