

# **TREATMENT OF VARICOSITIES \* BY ND: YAG LONG PULSE 1064 NM LASER (\* TELANGIECTASIA OF THE LOWER LIMBS)**

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## **TECHNIQUE**

The Nd: Yag laser is a solid laser made up of a crystal: YAG (Yttrium Aluminum Garnet). It emits a beam with a wavelength of 1064 nm, which is few absorbed by oxyhemoglobin and melanin but somewhat by water. Moreover, it is going deep into the skin which is an advantage but also a disadvantage when one does not control this technique.

## **INDICATIONS**

This laser is particularly suitable for the treatment of varicosities of the lower limbs especially when they are bluish and of small diameter. However, it will be necessary first to deal with the largest vessels upstream in order to close the feeding taps, and thus to perform a traditional phlebological assessment (Doppler). As for plumbing work, you have to repair the big pipes before taking care of the little ones. It is a global management and the dermatologist acts last, after a surgical treatment or sessions of sclerotherapy that remain the reference treatment.

To treat these varicosities, it is necessary to adapt the pulse duration to the size of the vessel (20 to 30 ms). It will also be necessary to adapt the size of the laser spot to that of the vessels in order not to overheat the surrounding tissues. Normally we are supposed to treat only varicosities inaccessible to the sclerotherapy but indications are more and more wide, and larger veins can be treated by increasing the size of the spot and the pulse duration.

## **PROGRESS OF THE SESSION**

Anesthesia is not used because it causes a vasoconstriction that impairs the visibility of these vessels. We use cold to decrease the pain because this laser can be a bit painful but bearable, if the session does not last...

The operator will follow the path of these vessels and shoot with the laser to cause a transient disappearance of these or a large spasm. They will therefore always be present at the end of the session with a small peripheral reaction like a "cat scratch". During this session, the doctor can use a transillumination device in contact with the skin to have a better visualization of deeper vessels to be treated.

If necessary, a wound healing cream will be applied at the end of the session but there should be no wound.

As after a session of sclerotherapy, a venous contention can be proposed for several days depending on the patient's condition.

## **SIDE EFFECTS**

The laser can sometimes induce some cracks in these vessels, leading to a small painless but unsightly hematoma.

Some vessels will remain very marked for a few months, that is to say that they will become more bluish than before or even brownish, but everything will fade spontaneously with time.

Rarely, crusts will appear and heal very slowly, leaving scars sometimes visible, since the epidermis of the lower limbs is very fragile and heals badly.

## **RESULTS**

The results are generally great for varicosities of 0.2 to 4 mm especially combined with sclerotherapy. The laser depends less on the operator than the sclerotherapy, and there are no systemic reactions related to an intolerance of the product used for the sclerosis. Small red blood vessels can be treated with very high fluences even at the ankles, where the sclerosis becomes dangerous. It will be necessary to inform the patients of the number of laser sessions to be planned and that the results will appear after a long time (2 to 3 months). Therefore, patients will have to be very, very patient.

Moreover, as this is a chronic, progressive pathology, patients will be seen again and again for new varicosities.

Other wavelengths have been tried to treat this pathology (alexandrite, 980nm diode, IPL with short wavelengths filtering ...) with interesting results not always easy to use. The 532nm KTP laser can also be used to treat tiny red varicosities (for example on the inner surface of the knees) but with a higher risk of pigment disorders.

There is also a specific clinical form called "essential telangiectasias in a stocking distribution" which develops on the ankles, the calves and sometimes above the feet. It only consists of a superficial red hair that tends to spread over time. In this case, it is impossible to perform sclerosis and the Nd: Yag laser is ineffective. Therefore, we use a 532 nm KTP laser or a pulsed dye laser, which are generally used to treat facial couperose. These lasers are very effective; some unsightly but superficial crusts remain visible for ten days and sometimes hyperpigmentation of the treated area for 1 to 2 months.

As for micro-sclerosis with needle, laser treatments of these varicosities of the lower limbs are not covered by the Social Security, so the dermatologist will explain to you the number of planned sessions according to the area to be treated, and the price (with VAT) for each session.

***This information sheet recommended by the French Laser Society can be given to you by your dermatologist. Even if it is not sufficient to have an estimate, it helps to give the patient a clear information.***

*The information consultation provides clear explanations on expected outcomes, side effects and possible complications. There are not any reimbursement from social security or medical leave for these aesthetic treatments. Prices are mainly based on the area to be treated. The total cost is to be evaluated with the patient and is the subject of a signed quote.*

*A post-operative order and an advice sheet are given to the patient with the doctor's contact information.*



**Laser et Peau : the French-language information site for patients, written by expert dermatologists from the Société Française des Lasers en Dermatologie.**

*Everything you need to know about laser treatments, pulsed light, radiofrequency and other techniques for skin care or aesthetic applications.*



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