

Sclerotherapy of Reticular and Telangiectatic Veins: How I do it

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Introduction

The patient's demand being aesthetic, our answer must be aesthetic and respect an unhurried and progressive treatment rhythm.

The development of reticular veins and telangiectasies being slow, the treatment cannot always be quick.

The duration of this treatment does not depend on the wish of the patient, but on the necessities of a good result.

The sclerotherapy's length requires method, rigour and prudence.

Like any sclerosis treatment, sclerotherapy of Reticular and Telangiectatic Veins has to respect the same basic principles as sclerotherapy of the big veins.

1- It has to be built on a mapping which must be as accurate as possible and which gives rise to every leak point, from the biggest to the smallest ones.

2- It has to start only after deletion of the different leak points

3- It will use a liquid or foam form, depending on the size or the depth of the reticular vein.

The treatments of the reticular veins and of the telangiectasies are very similar and can not be dissociated.

Indeed, telangiectasies are often fed by the reticular veins.

Definition

1- The reticular veins have a diameter that ranges from 1 to 3 mm. They are drawing wide networks that are coming either from a saphenian collateral or a perforating vein.

They have a blue colour, almost green.

Their depths are variable and do not exceed 5 mm.

Their topography affects the whole inferior members' area.

2- Telangiectatic veins are the smallest superficial vessels that are visible by the human eye. They measure 0.1 to 1 mm in diameter. They are located into the dermis.

There are four types: simple, arborized, spider or papular:

- The simple or linear telangiectasies do not have visible origins at the duplex examination.

- The arborized or dendritic (like candelabra) telangiectasies are fed by superficial reticular veins.

- The spider veins are generally fed by one small perforating vein, which is often difficult to be put into light.

- The papular telangiectasies do not have visible origins.

They can be red or an intense blue, but this colour does not depend on the depth.

They belong to a complex network, whereof the eye only sees the dermal superficial network.

Their topographic distribution is irregular and mostly concerns the thighs' level. However legs are not spared and the ankles' telangiectasies represent a therapeutical trap.

Investigations

Clinical examination is now no more sufficient and need some more investigations in order to precise the origin of these different networks and then, to adapt the treatment to each case.

1- Duplex

We use a Duplex machine with colour Doppler and with a probe of 18 MHz.

First of all, the duplex examination of the medial side of the thigh in colour Doppler mode with this high frequency probe is revealing many refluxes that correspond to tiny little perforating veins, whose diameter can not even be measured.

This observation must make us really careful during the treatment of the superficial veins network as we have to take into account all of these hemodynamic data.

At first the patient is examined in standing position. We control the absence of reflux on the principle venous axis which concerns the reticular or telangiectatic veins area that need to be treated.

Then we have to look for the existence of local refluxes by using compression manoeuvres in Doppler colour mode. When a colour reflux seems to have a short length, this length is controlled in duplex mode.

After that, we have to measure the diameter of the pathological little vein as well as its depth. This vein can be a little dependent on a saphenous axis or a post surgical varicosis recurrence.

At the lateral side of the thighs or legs, the spider veins are often centered by a little perforating vein of really small diameter. Bringing them to light remains difficult and requires to repeat this research.

Then we have to examine the patient in lying down position so as to check the depth and the diameter of the vein with become different.

This last information can modify the previous treatment.

2- The transillumination

This technique allows the visualisation of this reticular network by putting a cold light on the skin, whereof the light will be reflected on the aponeurosis and will reveal subdermic veins against light. The limit of this investigation is the obesity, because the thickness of the derm limits the refraction of the light.

It is a very good help for beginners, first of all to show well the importance of the reticular network.

3- The capillaroscopy

This method is not useful for the treatment of telangiectatic veins.

It is only used for the description of these small vessels.

4- Phlebography

It has been used as an experiment.

The injection of contrast products is made in the superficial venous network.

Pictures are showing the way of the product, which go to the depth, sometimes at the intra articular level.

These data confirm the origin - that can sometimes be under facial - of the little reticular veins.

The sclerotherapy

Principle: the aim is to inject a sclerosing product into the feeding veins and then in the visible cutaneous varicosities so as to reduce their diameter and then induce their fibrosis transformation.

The treatment is then often made in two times:

1/ the first one is about deleting the small refluxes and sclerosing the little reticular veins.

2/ the second one is about sclerosing the telangiectasies as soon as the little refluxes are deleted.

Material:

A/ Sclerosing agent:

The product that we use is Polidocanol in liquid form or foam.

These two forms can be associated.

The products' concentration is 0, 25% or 0,5%

The overall injected volume remains very low, less than 2 ml, in a liquid form or foam.

B/ Making of the foam:

In that case, the foam's fabrication respects the basic principles that are following:

- We are talking about the Double syringe system with female-female connector
- We use one liquid volume for four air volumes (1/4)
- We stop the first needle's piston with the thumb and we compress 5 times the second syringe.
- Then we make 9 moves back and forth between the two syringes.
- The obtained foam is compact during 2 min 30 sec at least.

NB: when we use 2, 5 ml syringes, the liquid/air ratio cannot be accurate. The liquid volume must be about 0, 5 ml at least, or 0, 6 ml, but NEVER below because in that case the foam quality becomes poor.

C/ Needles

At first, we use 26g needles.

To finish the treatment at the level of the red, spare or linear telangiectasies, we use 30g needles.

It is possible too to use butterfly. But in this case, the danger is to keep this material for a single injection of the totality of the amount close to 2 ml and then to induce side effects.

Protocols:

We can be in front of a superficial reticular vein or in front of a telangiectasy, the research of a subadjacent reflux at a little reticular vein level and for a standing patient remains systematic. We have to avoid several injections in the same small area which can induce local overdose and then side effects. In order to avoid such complication, we can place after each injection and on its location, a plaster with cotton wool. Usually, 2 ml of sclerosing solution allows about 10 to 15 injections into telangiectasies.

We have several cases depending first on the depth of the vein and second on the area of the reticular network:

1- When a reticular vein is born in the depth, we use the duplex guided sclerotherapy technique. However, the diameter measured in standing position - and that can range from 1 to 2 mm, often falls in lying position. So it can be around 1 mm or less. The current limits of this veinular diameter - which can be punctured, are about 0,7 tenth mm with an 18 MHz echographic probe. But with a 14 MHz probe it is also possible to inject into a 1 mm diameter vein. The reflux is deleted by echosclerosis with POL 0,5% in foam, with a 1 ml volume. The injected volume ranges from 1 to 2 ml depending on the size of the reticular vein and of the importance of the reticular network. The needle used is of 26g.

2/When this injection is possible, we have to monitor the product's diffusion in order to prevent the foam from affecting the eye visible telangiectasies. This volume is very often close to 1 mm. We can often observe a transitory disappearance of these telangiectasies. We do not complete this treatment immediately by a sclerosis of these telangiectasies, even with a liquid form, as there is a risk of excessive dose and so side effects. In fact, the sclerosis mechanism needs few weeks before its first stage which is the organisation of the reticular vein. This organisation progressively induces the disappearance of the telangiectatic veins. If we inject the telangiectasies immediately after the reticular vein, we can add the last dose to the first one, inducing overdose. We will complete the treatment during the next session, between 3 and 6 weeks later, by injecting telangiectasies with 0,25% or 0,5% POL in liquid form, in very tiny volume each time.

3/When the injection is not possible or failed, we have to abandon the initially planned treatment and we make another try during another session. Injection difficulties on these very tiny diameters often depend on the ambient temperature and thus on the meteorological conditions, which can retract these little vessels. Therefore these sessions are reported to those more favourable periods. The telangiectasies' direct injection without a preliminary deletion a little subadjacent reflux presents the risk of an inflammatory reaction with pigmentation or matting possibility.

4/When the telangiectasies are isolated, a 26g or 30g needle is used, depending on the size of the vessel. We do not inject foam but POL in liquid form with a concentration of 0,25% or 0,5% drop by drop on separate locations.

Topographic variations

This networks' topography varies, depending on the zone that need to treated, then the therapeutical attitude can be different.

1/ Lateral side of the thigh

Very often, the accurate duplex study put into light little perforating veins going through the fascia and having a diameter close to 2 mm in standing position.

They are the source of superficial reticular networks with linear telangiectasies, or distributed in candelabra or spider veins.

The aim is at first to close these perforating veins, but the injection will be made at the subfacial level, by avoiding the frequent small arteries that are close.

We will use POL 0, 5% in foam with around 1 mm volume.

We can then complete the reticular veins' treatment with 0, 5% POL in liquid form, from 1 to 2 mm for a large surface.

2/ Lateral side of the knee

Telangiectasies are less frequent at that level. We have to check rigorously whether there is or not a perforating vein with a para-articular direction that we must absolutely not treat. Indeed, such a sclerosis can generate a pain caused by an inflammatory reaction that is located in the immediate neighbourhood of the articulation. The solving of such a reaction often takes several weeks.

So the sclerotherapy of these telangiectasies has to be led really carefully with a liquid solution of 0, 25% POL.

3/ Lateral side of the leg

We often find little perforating veins that we have to treat in the same way as at the thigh level.

Thus it is made under duplex guided sclerotherapy with 0, 5% foam POL, 1 ml.

The sclerosis of these telangiectasies made in a second time, during a session on residual telangiectasies with a liquid solution of 0,25% or 0,5% POL in little drops.

4/ Medial side of the thigh

Four possible important reflux sources have to check:

- the big saphenous vein
- the anterior accessory saphenous vein
- the pudendal veins
- the perforating veins – mainly in the inferior part of the thigh.

The telangiectasies of this region are part of the most difficult to treat, because of richness of the superficial venous network.

Before treating the superficial telangiectasies network, we have to be sure that all the small refluxes have been deleted.

5/ medial side of the leg:

There is a small difference with the thigh because the number of small perforating veins is very low.

It is also easier to treat with better reactions.

Besides, the important decrease of the cellulite in this area reduces the importance of the subjacent network and so the networks' complexity.

6/ Telangiectasies of the ankle:

The majority of these vessels disappear after the treatment of the saphenous or perforating veins that stay above.

After that, we only have to respect the same general protocol that we have to use, except for the amount of sclerosing agent.

We have to clearly diminish it for the reticular veins so that for the telangiectatic ones and repeat only few injections at the each session.

Side effects

A/ migraine

The problem can occur after a small amount of liquid injected, because of the bubbles that stay in the depth of the syringe.

It can occur more frequently after foam injection.

It is reason why we have previously to know if the patient has migraines or not.

B/ matting

It is due to an injection of sclerosing agent without knowledge of subjacent small reflux. Its treatment is difficult because of the size of these vessels.

We can use laser or wait few months before trying to sclerose it again with low concentration.

C/ inflammatory reaction

It is generally due to a strong concentration or a too big amount of the sclerosing agent.

The telangiectasy appears red, dilated, sometime brown with a small cloth inside.

We have to perform a puncture with a needle of 23g in order to evacuate the clot which is of black colour.

D/ pigmentation

It is due to an overdose of sclerosing product but too, to the specific sensibility of the patient.

It can spontaneously disappear within several months and sometimes completely.

It is often useful to practice little thrombectomies with a 23g needle.

E/ Deep venous thrombosis

Their occurrence is rare and is not due to the volume or the concentration of the injected sclerosing product.

In that case, we systematically have to look for a thrombophilia, often a mutation of the Leiden's factor V.

Conclusion

The sclerotherapy of reticular veins and telangiectasies remains an aesthetic aimed treatment and has to respond the most accurately to the patient's expectations.

Therefore, we have to respect the basic rules of the classical sclerotherapy, while knowing how to use the technological progresses like echography and echosclerosis.

Both liquid and foam forms of the sclerosing product are going to be used, depending on the depth and the diameter of these little veins.

However, a constant prudence must remain the rule, as well in the product's dosing as for the treatment's length.

