



Medical Case Report – 1

Vascular Treatment with *MeDioStar* High Power Diode Laser from Asclepion-Meditec AG

MU Dr. Karolina Kykalova, Institute of Aesthetic Medicine, Prague, Czech Republic

In September 2001 we were provided with the opportunity to use a MeDioStar HC (High Power Diode Laser) which is equipped with a special laser beam delivery system for leg vein treatment. We have been working with this equipment since September 2001.

We have a small group of nine patients consisting entirely of women with chronic leg vein disease of maximum grade II: (Widmer, Fisher). They are aged between 33 and 65. We only treated blue leg veins on thighs or lower legs. These veins were situated mainly in the subcutis region.

We performed two sessions with this group and applied a one to two months follow up after initial treatment.

We used fluence rates between 130 J/cm^2 and 150 J/cm^2 . Of major significance are proper cooling before the laser shots are applied and bringing the handpiece into contact with the skin, yet removing (forcing inwardly) no hemoglobin (target) from the site of therapeutic treatment due to mechanical pressure. Treatment lasted between ten and twenty minutes depending on the number of veins requiring treatment.

Some patients complained about pain during treatment and I can say that the level of pain essentially depended on the individual patient condition. For sensitive patients, I recommend using anesthetic cream e.g. EMLA 2% lidocain for one hour together with intensive cooling.

No compression was applied after treatment. Recommended restrictions were no fitness exercises or heavy work which might increase the blood stream in lower extremities for one week, and, of course, no sun exposure including solar studios without sun-blocks for a minimum 5-week period.

Therapeutic procedure

Patients should be prepared very carefully, receive full information about treatment, healing time, pain and the period following treatment and generally be placed in a position to have realistic expectations.

Once all preparations have been finished, local anesthesia (cooling, cream) should be chosen. Treatment should be performed in skin contact, but applying only little pressure. Immediately after treatment the outcome can be seen – either the vein has disappeared or its colour has turned to a very dark blue (black-blue). Following treatment, the skin shows a certain redness or some kind of urticarial reaction. This will disappear within a few (max. 6) hours.

About 50% of our patients had minor crusts that remained for 5 to 12 days after treatment (depending on the selected energy and photo type). As a side effect one can expect hyper pigmentation (we have one lady with this problem in our small group). Care should therefore be taken if persons referring to photo type 4 or a higher type are to be treated! One should generally start with a low fluence - reduce fluence setting. Cooling time should not be longer than 15s! This is necessary to prevent hypopigmentation effects. There is no case of hypopigmentation in our group.

After initial treatment, our small group showed a minimum 50% and a maximum 90% (approximately) success rate. We identified only one case, in which this rate was reduced to a level of 20% (from 50%) due to recanalization in the course of two months. With all other patients, the effect of initial treatment stayed at the same level. Presently, we have three patients under observation following second treatment with an increasing effect noticeable during a very short follow up time (one week).

This procedure for leg vein treatment can be an opportunity and the results look very good this time, but should be subjected to a longer follow up after treatment. It appears that two or three sessions are enough if energy is properly dosed, contact mode and cooling devices used and patients have good indications and realistic expectations.

Medical Case Report – 2-Summary

Vascular Treatment with *MeDioStar* PRO-V High Power Diode Laser from Asclepion-Meditec AG

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Number of patients: September 2002 – 24 (women, age 27-60)

Number of treatment: average 3 (2-5)

Target : blue leg veins, diameter 2-4mm (microvarixes) thies, lower legs

Phototype: Fitzpatrick I.-III.

Contraindication:

- Tanning,
- Fitzpatrick IV. - VI.,
- Isotretinoin in past 6 months,
- Spontaneous keloids,
- Diabetes,
- Pregnancy,
- Ischemia of lower extremities,
- Skin disease in place of treatment,
- Nevus nevocellularis in the place of treatment

Treatment:

Fluence:

1. 130-150J/cm²
2. reduction to 110-100J/cm²
- 3.+4.+5. ca 90-100J/cm²

Endpoint: disappearing of the vessel and fotocoagulation

Without combination with sclerotherapy or small surgery (local flebectomy).

Posttreatment:

Additional cooling (ice-packs), local corticosteroids, panthenol cream(foam),
Fitness, trainings, sauna and heavy work is prohibited
No compression after treatment.

Effect:

Small veins : 1-2mm diameter after third treatment almost 70% completely healed without coming back (last control 7/2002 – 2months after last treatment)

Medium vessels: 2-3mm diameter about after third 50% completely healed without coming back (last control 7/2002 – 2months after last treatment)

Big vessels: 4mm diameter – need more than 3 treatments, and recurrence after third is about 70% so need more treatments and higher energy.

Side effects:

Crusting reduced with reducing fluence

– after treatment with 90-100J/cm² only 30% of the patients

Hyperpigmentation – 3 patients,

Turn to **hemosiderin** – 1 patient (copper color hyperpigmentation in 3 weeks),

Hypopigmentation - 1 patient,

Scar (perimalleolar) - 1 patient

Results:

Laser treatment of leg veins with MeDioStar PRO-V is an efficient procedure with good results even in monotherapy without combination with other methods for microvarices. Now we are using lower fluence with more rapid healing and less pain during the treatment with same effects. Number of treatments is individual mainly in larger microvarices (4mmØ).



Before
treatment



Patient
after 5 weeks



Immediately
after
treatment



Cooling before treatment
(anesthetic and skin burn
preventing effect)

