

## Vbeam™ Pulsed Dye Laser Treatment of Leg Telangiectasia

Luigi L. Polla, M.D.

Medical Director, Forever Laser Institut, Geneva, Switzerland

### Introduction

Leg telangiectasia, linear or “spider” ectasia formed by dilated venules, capillaries or arterioles, are frequently observed, occurring in 35 % of US women.<sup>1,2</sup> Such lesions are caused by multiple factors, including genetic pre-disposition, gravity, pregnancy, and trauma, becoming increasingly apparent with age.

While sclerotherapy remains the gold standard for the treatment of leg telangiectasia, with rates of success approaching 100%, recent studies have demonstrated good clearance using various lasers.<sup>3,4,5,6</sup>

The pulsed dye laser in particular, used in the treatment of general vascular lesions, provides successful results in the clearance of small leg vessels.

### Method

Thirty-nine women of skin types I to III suffering from leg veins measuring 0.05 to 0.5 mm in diameter were treated with the Vbeam laser. None of these patients showed any clinical signs of venous insufficiency.

The treatment protocol and parameters depended on the size of the targeted

vessels. The lowest fluence inducing purpura was selected, based on individual patient reaction. The Dynamic Cooling Device™ (DCD) parameters were set at 30 ms spray and 10 ms delay.

Patients with vessels measuring between 0.05 and 0.2 mm of diameter were treated with the following parameters: 6 ms,  $6.5 \pm 0.5$  J/cm<sup>2</sup>, 10 mm spot, with two to three consecutive passes. Each patient was treated two to five times, at weekly intervals.

Patients with vessels measuring between 0.2 and 0.5 mm of diameter were treated with the following parameters: 20 ms, 10-12 J/cm<sup>2</sup>, 7 mm spot. Each patient was treated one to three times, at varying intervals (depending on availability). A minimum of six weeks was recommended in between treatments.

All patients were treated topically with vitamin K to improve the resolution of laser-induced purpura. In the case of long-lasting hyperpigmentation (more than six weeks), the patients were treated with hydroquinone (bleaching cream) and an iron chelator. Complete sun avoidance was recommended for six weeks. Post-treatment compression was unnecessary.



## Results

### Pre-treatment



### After three treatments at six-week intervals



Assessment of the results was performed six to twelve weeks after the final treatment by comparing before and after photographs and by direct patient self-appreciation.

Seventy percent and more clearance was obtained in 66.6% of patients, with a total elimination in 25.6% of cases. Of these patients, 64.4% of the clearance was obtained after the first treatment. The majority of unsatisfactory cases was observed in patients with vessels of very small diameter.

The main side effects were pain, clot persistence, transitory increase of the visibility of the vessels and inflammation. There was immediate purpura following all treatments, which lasted one to five days.

In addition, short-term (less than six weeks) hyperpigmentation was observed in 33.3% of cases. In only 5% of the cases did the hyperpigmentation last for more than six weeks. One case of telangiectatic matting was observed.

## Discussion

New developments in laser technology have enabled improved therapy of leg telangiectasia. The Vbeam is a particularly effective means of clearing

small leg vessels with a low incidence of long-lasting hyperpigmentation. The results obtained with this laser could be considered superior to those obtained previously.<sup>7,8</sup>

The Vbeam remains ineffective for leg veins of larger diameter. Other lasers (such as Nd:YAGs) might be combined with the pulsed dye laser to obtain clearance of larger vessels.

The relative lack of patient discomfort combined with a high degree of patient satisfaction indicates a favorable level of acceptance of Vbeam therapy for the treatment of small leg telangiectasia.

## Bibliography

1. Engel A, Johnson ML, and Haynes SG. 1988. Health effects of sunlight exposure in the United States. *Arch Dermatol* 124:72-79.
2. Sadick NS. 1992. Predisposing factors of varicose and telangiectatic leg veins. *J Dermatol Surg Oncol* 18:883-886.
3. Green D. 1998. Sclerotherapy for the permanent eradication of varicose veins. *J Am Acad Dermatol* 38:461-475.
4. Ross BS, Levine VJ, and Ashinoff R. 1997. Laser treatment of acquired vascular lesions. *Dermatologic Clinics* 12:385-396.
5. Goldberg DJ. 2000. Laser treatment of vascular lesions. *Clin Plast Surg* 27:173-180.
6. Kauvar A. 2000. The role of lasers in the treatment of leg veins. *Semin Cutan Med Surg* 19:245-252.
7. Hohenleutner U, Walther T, Wenig M, Baumler W, and Lanthaler M. 1998. Leg telangiectasia treatment with a 1.5 ms pulsed dye laser. *Lasers Surg Med* 23:72-78.
8. Hsia J, Lowery JA, and Zelickson B. 1997. Treatment of leg telangiectasia using a long-period pulsed dye laser. *Lasers Surg Med* 20:1-5.



530 Boston Post Road  
Wayland, MA 01778  
Phone: 508-358-7637  
Fax: 508-358-5569

Vbeam is a trademark of Candela Corporation. Dynamic Cooling Device (DCD) is a trademark. To find out more about Candela and its products, contact your authorized Candela representative, or call 1-800-733-8550 in the USA. Outside the USA contact the office nearest you or visit our website at <http://www.vbeam.com>. 0920-23-0068 Rev. 02 10/01