



David A. Laub, M.D.

Vbeam® Pulsed Dye Laser Treatment of Rosacea

David A. Laub, M.D.

Dermatology Laser & Cosmetic Surgery
Center of Marin,
Marin, California, USA

Assistant Clinical Professor,
University of California,
San Francisco, California, USA

Introduction

Rosacea is a common inflammatory disorder that has three stages of development. In its initial stages, rosacea manifests itself as generalized redness and a tendency for flushing. The vascular component of rosacea usually worsens in later stages, leading to the appearance of individual vessels and telangiectasia on the median areas of the face. In its worse stages, papules and pustules can appear, followed by tissue hypertrophy, which in its worse cases can lead to what is known as "W. C. Fields' nose".

Rosacea has been treated with both topical and oral antibiotics. While the pulsed dye laser has been used to treat the vascular component of rosacea (diffuse redness and telangiectasia) for 10+ years, the post-treatment purpura has made this treatment modality unacceptable to many patients who could not afford a 7-to-10-day downtime. New developments in laser technology have led to the possibility of treatment at longer pulse durations, which enable therapeutic efficacy with minimal purpura or no purpura at all.

Method

We usually recommend that patients avoid all blood thinners for a week prior to laser treatment, including aspirin, non-steroidals, and vitamin E.

After signing an informed consent form for pulsed dye laser treatment, patients were treated with the Vbeam at sub-purpuric levels. In most cases, the first treatment

involves the following parameters: 10 mm spot, 7 to 7.5 J/cm², and a pulse duration of 10 ms. Parameters for subsequent treatments depend on the patient's response to the first treatment. If the response was satisfactory, the same parameters will be maintained. However, if the response to the first treatment was minimal, the pulse duration will be reduced to 6 ms, still with the 10 mm spot and an energy of 7.5 J/cm². In all cases, the Dynamic Cooling Device™ (DCD™) is set at 30 ms spray and 30 ms delay.

In some rare cases, the pulse duration will be reduced further to 3 ms (again with the 10 mm spot and 7.5 J/cm²). This may be useful for recalcitrant vessels located on the nose or in the case of some male patients with thicker skin. At this shorter pulse duration, however, there is an increased risk of purpura.

The entire involved area was treated during each laser session. On average, each patient received three to four treatments, at three- to four-week intervals. There was no post-treatment care regimen aside from a some 2.5% hydrocortisone lotion the first day.

It should be noted that in some cases, medical therapy is administered prior to laser treatment. This is the case in patients with a marked inflammatory component and/or papular lesions. In such cases, two to three months prior to laser treatment, the patient will be put on a regimen of topical and oral antibiotics. Medical therapy can be continued in conjunction with laser treatment when necessary.



Results

There was greater than 60% improvement seen in all the patients treated. See Figures 1 and 2.

There was no postoperative purpura at the settings used. There were no side effects noted in any patients. Erythema was noticeable in some patients, and can last up to one day. In addition, post-treatment edema can last for one to two days, in particular in the periorbital and malar cheek areas.

Discussion

The pulsed dye laser had been used for the treatment of rosacea for many years. As purpura was a necessary side effect for effective treatment, this treatment modality was, however, not acceptable to all patients.

With newer pulsed dye lasers such as the Vbeam, which offer longer pulse durations for more gentle heating and coagulation of the blood vessels, patient acceptance of laser treatment of rosacea has greatly increased. Patients can now be treated with no downtime.

In addition, the longer pulse durations have a clinical benefit. When treating generalized redness, achieving equal clearance of the entire involved area is essential. Treating at sub-purpuric levels enables the avoidance of the "polka-dot" effect, and ensures a uniform clearance of the redness.



Figure 1—Pretreatment



Figure 2—After 2 treatments

Candela Corporation
530 Boston Post Road
Wayland, MA 01778, USA
Phone: (508) 358-7637
Fax: (508) 358-5569
Toll Free: (800) 821-2013
www.clzr.com



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