

CLINICAL BULLETIN

No. 10



Suzanne Linsmeier
Kilmer, M.D.

Vbeam® Pulsed Dye Treatment of Periorbital Rhytids

Suzanne Linsmeier Kilmer, M.D.

Laser & Skin Surgery Center

of Northern California,

Sacramento, California, USA

Assistant Professor, University of

California, Davis, Medical Center

California, USA

Introduction

Non-ablative laser skin rejuvenation is an attempt to offer patients a no downtime procedure that stimulates collagen remodeling for the reduction of wrinkles and acne scars. While laser resurfacing continues to be the most effective and permanent way to rejuvenate the face (achieving a rejuvenation of 5-10 years in a single treatment), many patients are unwilling to face the post-operative care and downtime necessary after this procedure. These non-ablative technologies help fill this need.

The rationale behind this new type of treatment is the ability of lasers to deliver heat to targeted areas in the dermis, thus producing a micro-wound and activating fibroblast activity and the production of collagen. While new devices have been introduced on the market, existing devices are also being used for this application, including pulsed dye lasers (PDL), developed in the early 1980s for treatment of vascular lesions. Two independent studies documenting PDLs' benefit on solar-damaged skin were performed and then published jointly in a paper by Zelickson and Kilmer et al.¹ Although only fine wrinkles showed significant improvement, histological changes were universal. Other technologies soon followed, and many wavelengths have been

proven effective. Unfortunately, there are no studies comparing these new lasers and other technologies for skin rejuvenation.

Method

After signing an informed consent form for pulsed dye laser treatment, patients were treated with the Vbeam at subpurpuric thresholds. The following parameters were typically used: a 10 mm spot, a fluence of 6 J/cm² or lower, and a pulse duration of 6 ms. The Dynamic Cooling Device™ (DCD™) was set as follows: 20 ms spray, 30 ms delay.

Patients were typically treated twice at 6-12 week intervals.

Anesthesia needs are minimal; topical anesthetics with minimal vasoactivity can be used if requested by the patient. Postoperatively, there is little care other than moisturizer and sunscreen.

Results

Although subjective, most patients have noted improvement and are satisfied with their results. See Figures 1 and 2.

There was no postoperative purpura at the settings used. No other side effects were noted on any of these patients, except for transient edema.



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Discussion

The Vbeam is an effective and safe option for periorbital wrinkle reduction. While some believe that a short pulse duration is necessary for a pulsed dye laser to be effective for this application, the longer pulse width used here is indeed effective as well. The role of the pulse duration in the clinical efficacy of such treatment clearly remains to be defined. As noted above, earlier published studies on pulsed dye laser treatment of rhytids, carried out at this Center with an earlier model of Candela's pulsed dye laser (585 nm, 0.45 ms), reported significant improvement in 90% of the patients treated.

While additional research is necessary in order to define the optimal parameters for pulsed dye laser treatment of rhytids, the Vbeam offers an excellent option for physicians whose patients are looking for a soft and non-ablative approach to periorbital wrinkle treatment.

Bibliography

1. Zelickson B, Kilmer S, Bernstein E, Chotzen V, Dock J, Mehregan D, and Coles C. "Pulsed Dye Laser Therapy for Sun Damaged Skin." *Lasers in Surg. and Med.* 25 (1999) 229-236.



Figure 1—Pretreatment



Figure 2—Post-treatment