

Use of a 585 nm Pulsed Dye Laser for the Treatment of Morphea

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INTRODUCTION. The clinical presentation of morphea varies from localized plaques to generalized eruptions. Its cause remains unknown and medical treatments have often proved unsatisfactory. Studies have previously shown that improvement of hypertrophic scars and fibrotic skin can be achieved with the use of a 585 nm pulsed dye laser (PDL).

METHODS. A case of plaque-type morphea was treated with 585 nm pulsed dye laser irradiation at an average fluence of 5.0 J/cm² at bimonthly time intervals.

RESULTS. Marked clinical improvement as evidenced by improved pliability and skin coloration was seen after 4 successive PDL treatments. No side effects or complications were encountered.

CONCLUSION. Pulsed dye laser therapy is a viable treatment option for morphea. The mechanism of its effect in this condition remains unknown.

D. EISEN, MD AND T. S. ALSTER, MD HAVE INDICATED NO SIGNIFICANT INTEREST WITH COMMERCIAL SUPPORTERS.

MORPHEA IS CHARACTERIZED by circumscribed, hypo- or hyperpigmented sclerotic plaques that have a violaceous border when active. While there are several different clinical presentations of morphea including guttate, plaque, linear, segmental, subcutaneous, and generalized,¹ their histologic appearances are similar. The cause of morphea is still unknown. Treatment for this condition can be challenging and often unsatisfactory, despite the reported use of intralesional, topical, and systemic steroids, antimalarials, phenytoin, colchicine, D-penicillamine, and photochemotherapy. While the natural evolution of morphea is spontaneous regression, it generally occurs over several years and may result in a permanent disfiguring scar.

The 585 nm pulsed dye laser (PDL) has previously been shown to improve the height, texture, color, and pliability of hypertrophic scars and keloids of varying etiologies.²⁻⁴ The mechanism by which the vascular-specific laser exerts its effects on scars remains unknown.⁵

Case Report

A 41-year-old woman with no significant past medical history or contributory occupational or environmental exposures presented for treatment of a single 3 cm diameter atrophic, fibrotic, hyperpigmented plaque of the right submandibular area (Figure 1). A skin biopsy was performed which showed histologic changes con-

sistent with the clinical diagnosis of morphea. Treatment was initiated with a 585 nm long-pulsed (1.5 msec) dye laser with dynamic epidermal cooling (Sclerolaser, Candela Laser Corp., Wayland, MA). Four treatments at bimonthly time intervals were delivered to the plaque (average fluence 5.0 J/cm², 10 mm spot size, 30 msec cryogen duration), producing a mild hyperemic tissue response.

Results

Marked softening of the sclerotic plaque and improvement in skin coloration were noted after each of the



Figure 1. Fibrotic, hyperpigmented plaque on the right mandible.

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four treatment sessions. No side effects or complications were encountered as a consequence of treatment. Clinical improvement was still in evidence 6 months after the final treatment session (Figure 2).



Figure 2. Normalization of skin color and texture within sclerotic plaque after four PDL treatments.

Conclusion

Similar to the positive clinical effect seen after 585 nm PDL irradiation of hypertrophic scars, the improvement of the sclerotic plaque in our patient raises the possibility that laser therapy is a viable treatment option for morphea. Others have suggested no improvement in these sclerotic plaques with PDL irradiation,⁶ indicating that controlled studies with a greater number of patients are needed to better determine the PDL's role in the treatment of this condition.

References

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