Successful Treatment of Discoid Lupus erythematosus with Argon Laser

Annegret Kuhn  Petra Maria Becker-Wegerich  Thomas Ruzicka  Percy Lehmann

Department of Dermatology, Heinrich Heine University, Düsseldorf, Germany

Abstract

Vascular lesions with telangiectasias on visible areas, such as the face, are common in discoid lupus erythematosus (DLE); however, an efficient management of these skin lesions can sometimes be difficult. Since argon laser light is able to specifically coagulate vascular structures, it has been used in the treatment of various vascular skin malformations. Therefore, we addressed the issue whether argon laser treatment could be a therapeutic alternative for this disease. Here, we report on a patient with DLE, who suffered from long-standing erythematous, telangiectatic plaques on the face refractory to standard regimens of therapy. After 2 laser applications, a significant improvement was observed and after 5 sessions of argon laser therapy the treated skin lesions had completely resolved with an excellent cosmetic result. The patient tolerated the laser treatment well without any short-term side effects. These data indicate that argon laser therapy might be a powerful alternative approach in the treatment of vascular skin lesions of DLE.

Key Words

Argon laser · Discoid lupus erythematosus · Treatment of cutaneous lupus erythematosus

Case Report

A 59-year-old white female had a 15-year history of skin lesions of variable extent over the extensor aspects of the arms and the V area of the neck. The clinical diagnosis of DLE was supported by histological examination which demonstrated focally thinned epidermis associated with orthokeratosis and smudged appearance of the dermoepidermal junction as well as superficial and deep perivascular lymphocytic infiltration. When referred to our clinic she presented with erythematous, hyperkeratotic, confluent, disfiguring plaques and telangiectasia on her cheeks (fig. 1a) and the diagnosis of DLE was confirmed by experimental reproduction of skin lesions by UVA and UVB photoprovocation as previously described [10]. Serological investigations such as antinuclear antibodies (HEp-2 cells) were negative and rheumatoid factor, immunoglobulins (IgG, IgM, IgA) as well as complement components (C3, C4) were within normal limits. Furthermore, the patient showed no signs of underlying systemic manifestations. The patient had been treated with standard therapies including local corticosteroids and antimalarials (chloroquine 250 mg/day) for several months; however, the skin lesions on the face continued to develop and remained active.

We used an argon laser (DLS 5-Laser, Aesculap-Meditec GmbH, Jena, Germany) at a wavelength of 514 nm, a power level of 2 W, a pulse duration of 0.1 s and a spot size of 1 mm. The pulses were applied not overlapping (‘polka dot technique’). Before treatment, a defined area on the face was test treated, and clinical assessments and photographs were obtained before and 4 weeks following each laser session. After application of a topical anesthetic cream (Emla®), the patient tolerated the laser therapy without
Fig. 1. a Erythematous, hyperkeratotic, telangiectatic plaques on the cheeks of a patient with DLE before argon laser treatment. b Complete resolution of the vascular DLE skin lesions on the cheeks after 5 sessions of argon laser treatment.

Table 1. Treatment of lupus erythematosus with laser: review of the literature

<table>
<thead>
<tr>
<th>Year</th>
<th>Authors</th>
<th>Indication</th>
<th>Type of laser</th>
<th>Response</th>
<th>Side effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>60–70% permanent bleaching</td>
</tr>
<tr>
<td>1995</td>
<td>Nunez et al. [12]</td>
<td>LE telangiectoides (1)</td>
<td>FPDL</td>
<td>excellent improvement clearance in more than 75%</td>
<td>slightly transient hyperpigmentation</td>
</tr>
<tr>
<td>1996</td>
<td>Nunez et al. [13]</td>
<td>SLE (4)</td>
<td>FPDL</td>
<td>none</td>
<td>hyperpigmentation</td>
</tr>
<tr>
<td>1996</td>
<td>Nürnberg et al. [14]</td>
<td>DLE (1)</td>
<td>argon laser</td>
<td>clinical and histological improvement</td>
<td>none</td>
</tr>
<tr>
<td>1999</td>
<td>Raulin et al. [15]</td>
<td>DLE (8), CLE (1)</td>
<td>FPDL</td>
<td>clearance rate of 70%</td>
<td>none</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SCLE (1), SLE (2)</td>
<td></td>
<td></td>
<td>hyperpigmentation</td>
</tr>
</tbody>
</table>

Figures in parentheses indicate numbers of patients. LE telangiectoides = Lupus erythematosus telangiectoides; CLE = cutaneous lupus erythematosus; SCLE = subacute cutaneous lupus erythematosus; SLE = systemic lupus erythematosus; FPDL = flashlamp pulsed dye laser.

Discussion

Single observations in the literature revealed successful treatment of cutaneous vascular lesions of lupus erythematosus with the carbon dioxide and the pulsed dye laser (table 1). In 1986, Henderson and Odom [11] treated characteristic plaques of 1 DLE patient with the carbon dioxide laser and observed a dramatic clinical and cosmetic improvement of the cutaneous lesions. Hyperpigmentation in the tested areas and reactivation of DLE in the periphery were described as side effects. Nunez et al. [12, 13] reported on 4 patients with telangiectatic chronic erythema of cutaneous lesions in patients with systemic lupus erythematosus (SLE) who had been successfully treated with the flashlamp pulsed dye laser operating at 585 nm. Recently, Raulin et al. [15] published a group of 12 patients with different forms of lupus erythematosus who were...
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Suitable for treating superficial vascular lesions as well as cosmetically troublesome telangiectasia which are common in DLE [21]. Nevertheless, there is some debate as to whether argon-laser-induced scarring reflects the skill of the physician and postoperative wound care rather than an intrinsic problem with the laser-tissue interaction [18].

This presentation suggests that the argon laser appears to be a promising alternative for the treatment of vascular DLE skin lesions with an excellent cosmetic result. However, the indication must be carefully evaluated and the risks and benefits should be precisely documented, as skin texture changes and scarring may occur.

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