Successful Treatment of Hailey-Hailey Disease with a Scanned Carbon Dioxide Laser

Sir,

Familial benign chronic pemphigus (Hailey-Hailey disease) is characterized by recurrent blistering lesions. Topical therapy of Hailey-Hailey disease includes application of antibiotic or antifungal solutions and glucocorticosteroids, but these therapies do not usually induce prolonged remissions. Surgical intervention with dermabrasion or excision of the lesions has been associated with postoperative complications and is followed by postoperative pain than dermabrasion, which is followed by symptomatic improvement (5, 6). However, by using the CO₂ laser in defocus, the depth of CO₂ laser ablation cannot be controlled very effectively, resulting in a considerable risk of scarification or insufficient ablation leading to recurrence of the disease. This problem is also observed in cryosurgery or dermabrasion. The modern pulsed or scanned CO₂ laser systems deliver the laser energy so quickly that controlled vaporization of tissue in layers of 40–60 μm becomes possible (4, 7) allowing deeper ablation into the dermis compared with Er:YAG laser systems. The patients described above show that the SilkTouch Flashscanner® CO₂ laser system allows ablation of lesional skin with sufficient depth to induce remission of the disease without scar formation. As illustrated by case 1, treatment should extend beyond the visible skin margin (1–2 cm) to prevent recurrence.

The mechanism of durable healing of Hailey-Hailey disease lesions after vaporization of the affected areas with the scanned or pulsed CO₂ laser is not clear. Theories maintain that the superficial erosions are re-epithelialized by fast proliferating adnex keratinocytes that do not express the molecular defect of Hailey-Hailey disease (2, 3). An

Case 2

A 31-year-old male patient with recurrent Hailey-Hailey disease of both axillae was treated similarly to case 1. Again, there were no postoperative complications and after a follow-up of 6 months the treated areas were scar-free and without clinical signs of the disease.

DISCUSSION

The conservative topical treatment of Hailey-Hailey disease is difficult and is characterized by the frequent recurrence of symptoms and lesions. Interestingly, dermabrasion or excision of lesional sites results in durable healing. An alternative to surgical intervention is the ablation with a CO₂ laser. CO₂ laser ablation is a careful, low bleeding method with less postoperative pain than dermabrasion, which is followed by rapid healing of the erosions (4, 5). Two previously published studies used CO₂ laser in defocus reported significant clinical and symptomatic improvement (5, 6). However, by using the CO₂ laser in defocus, the depth of CO₂ laser ablation cannot be controlled very effectively, resulting in a considerable risk of scarification or insufficient ablation leading to recurrence of the disease. This problem is also observed in cryosurgery or dermabrasion. The modern pulsed or scanned CO₂ laser systems deliver the laser energy so quickly that controlled vaporization of tissue in layers of 40–60 μm becomes possible (4, 7) allowing deeper ablation into the dermis compared with Er:YAG laser systems. The patients described above show that the SilkTouch Flashscanner® CO₂ laser system allows ablation of lesional skin with sufficient depth to induce remission of the disease without scar formation. As illustrated by case 1, treatment should extend beyond the visible skin margin (1–2 cm) to prevent recurrence.

The mechanism of durable healing of Hailey-Hailey disease lesions after vaporization of the affected areas with the scanned or pulsed (8) CO₂ laser is not clear. Theories maintain that the superficial erosions are re-epithelialized by fast proliferating adnex keratinocytes that do not express the molecular defect of Hailey-Hailey disease (2, 3). An
alternative hypothesis could be proposed that a gene involved in the process of senescence of keratinocytes causes Hailey-Hailey disease, which might explain the late onset of the disease. Thus, repopulation of treated areas with “young” keratinocytes temporally cures the phenotype of Hailey-Hailey disease.

In summary, this report corroborates and extends previous studies suggesting that for severe cases of Hailey-Hailey disease ablation of affected areas with modern CO₂ laser systems may become the surgical treatment modality of choice. However, larger controlled studies are needed to confirm these results and to determine the long-term effects of this treatment and the duration of remission.

REFERENCES


Accepted July 9, 1999.

Andreas Kruppa, Bernhard Korge, Jörg Lasch, Karin Scharffetter-Kochanek and Nicolas Hunzelmann*
Department of Dermatology, University of Cologne, Joseph-Stelzmannstr. 9, 50931, Köln, Germany.
E-mail: nico.hunzelmann@uni-koeln.de
*Address for offprints.