Inflammatory linear verrucous epidermal nevus: Successful treatment with the 585 nm flashlamp-pumped pulsed dye laser

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Inflammatory linear verrucous epidermal nevus (IL VEN) is a benign hyperplasia of the epidermis of unknown cause that most commonly occurs on the lower extremities. The lesion usually appears in early childhood and is persistent and pruritic. Treatments for IL VEN have been associated with high rates of recurrence and/or scarring. This is the first report of successful treatment of IL VEN with the 585 nm pulsed dye laser.

CASE REPORT

A 5-year-old girl had erythematous, scaly, and excoriated papules and plaques in a linear pattern on the posterior aspect of her right buttock and thigh and in the popliteal fossa. The lesions had been present since 2 years of age and had been unsuccessfully treated with topical steroids and oral antihistamines to lessen the severe pruritus. The patient scratched incessantly and antibiotic therapy was required on several occasions to treat superinfected excoriations.

A biopsy specimen revealed psoriasiform epidermal hyperplasia with mounds of focal parakeratosis overlying areas lacking a granular layer and a nonspecific chronic dermal inflammatory infiltrate consistent with a diagnosis of IL VEN.

Treatment was initiated with the 585 nm flashlamp-pumped pulsed dye laser at an energy density of 6.5 J/cm². Six weeks after a single laser treatment, the patient's pruritus had significantly improved and the skin lesions showed partial resolution. After a second laser treatment at 6.75 J/cm², the lesions showed a moderate decrease in erythema and slight diminution in size (Figs. 1 and 2). In addition, the patient experienced no further pruritus despite the cessation of her topical steroid and oral antihistamine therapy.

DISCUSSION

IL VEN has been thought by some to be lichen striatus. Although IL VEN may clinically resemble lichen striatus, its behavior differs in that it is persistent and pruritic, whereas the asymptomatic lesions...
of lichen striatus typically regress within 6 months to 1 year. In addition, the histologic pattern of ILVEN showing parakeratosis and psoriasiform hyperplasia with acanthosis differs from the lichenoid inflammation seen in lichen striatus.

Treatment modalities for ILVEN have included topical and intralesional corticosteroids, cryosurgery, dermabrasion, electrodessication and curettage, and excision with grafting. Each of these commonly are associated with recurrences and/or significant scarring. Because treatment with the 585 nm flashlamp-pumped pulsed dye laser has recently been reported to ameliorate the neuralgia and telangiectases accompanying Goltz syndrome, its use in this patient was similarly justified. Although recurrence is possible, the symptomatic improvement seen in this patient continued to be evident 1 year after the laser treatment.

The mechanism whereby the 585 nm pulsed dye laser produced improvement in this patient cannot be fully explained; however, mast cell degranulation has previously been shown to be affected by this laser system. In addition, the ability of the 585 nm pulsed dye laser to destroy blood vessels that lie in close proximity to cutaneous nerves could conceivably alter the neural response in those areas.

REFERENCES