Treatment of purpura with Nd:YAG laser in skin types IV-VI

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THERAPEUTIC CHALLENGE

Purpura and ecchymosis can result from a traumatic injury or can be an undesirable side effect of a cosmetic procedure. Hastening resolution of purpura is often desirable for patient satisfaction of a cosmetic intervention. Pulsed-dye laser (PDL) has been evaluated for lighter skin types (Fitzpatrick skin type I-III) and has been proven effective in promoting rapid resolution of such lesions.[1] Persons with darker skin types, however, are typically not appropriate candidates for PDL treatment, given their higher risks for adverse events because epidermal melanin competes with the laser's target chromophore, hemoglobin.

SOLUTION

Fortunately, there are different laser options that target hemoglobin. For Fitzpatrick IV-VI, the 1064-nm long-pulsed neodymium-doped yttrium aluminum garnet (Nd:YAG) laser is a safer option with deeper penetration, less absorption by epidermal melanin, and limited thermal injury to the epidermis and upper papillary dermis. We successfully used the Nd:YAG laser on 2 of our patients with Fitzpatrick skin type V who presented with a 2-day history of traumatic purpura (patient 1) and bruising secondary to filler injection (patient 2). In patient 1, a single lesion was treated and 2 other lesions were used as controls (Fig 1). In both patients, notable resolution was noted after 24 hours. In conclusion, the Nd:YAG laser can be safely used in darker skin types to hasten the resolution of undesired purpura or ecchymosis. We highlight this treatment modality for vascular lesions as many are unware of this potential use.

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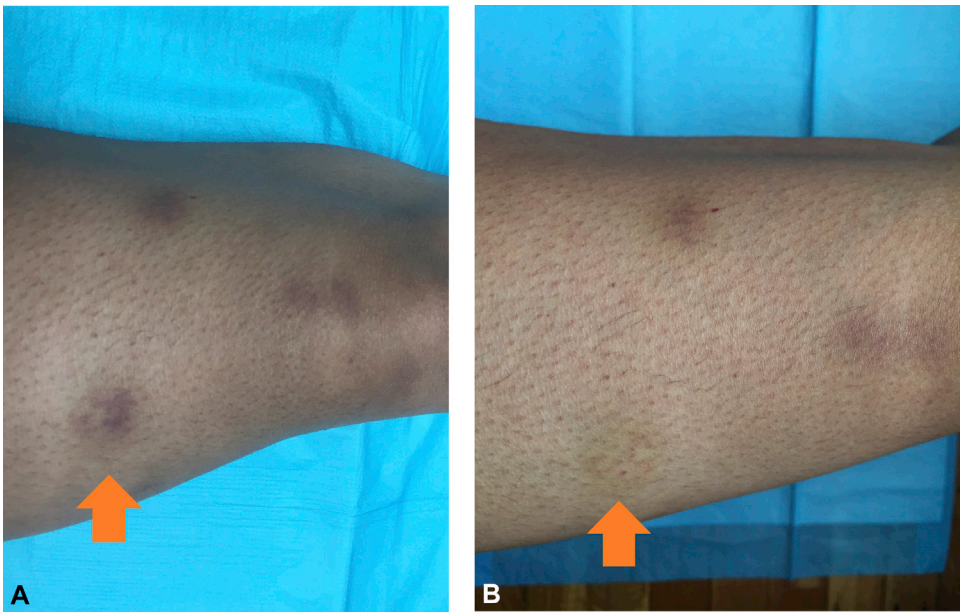

Fig 1. A, Skin of patient of Fitzpatrick skin type V with 3 traumatic ecchymoses. *Arrow* indicates lesion treated with neodymium-doped yttrium aluminum garnet laser with the following parameters: 180 J/cm^2 fluence, 3-mm spot size, and 60-ms pulse duration. **B**, One-day posttreatment. *Arrow* indicates treated lesion. Faster resolution compared with untreated lesions is demonstrated.

REFERENCE

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