Dear Editor,

Melanocytic nevus (MN) is a benign melanocytic neoplasm. The incidence of melanoma in the nonacral lentiginous area is rare in Asians. The removal of facial MN is commonly requested by the Asian patients for cosmetic enhancement and because the Chinese fortune-telling utilizes mole positions. Similar to our colleagues in Asia, we use laser to treat facial MN. We believe that our dermoscopic findings address the fine balance between minimizing the risk and patient expectations.

This prospective study was approved by the Institutional Review Board of Xiamen Chang Gung Hospital, Xiamen, China. We enrolled 12 patients (Fitzpatrick skin type III or IV) with 66 facial MN that were clinically and dermoscopically diagnosed with benign lesions by two dermatologists. The exclusion criteria were as follows: (1) treated MN, (2) history or family history of malignant melanoma, (3) history of hypertrophic scar or keloid, and (4) triggers for the development and/or growth of MN.

Dermoscopy showed 64 cases of pseudonetwork MN and 2 cases of cobblestone MN. The combination of different lasers is considered more effective than a single laser for MN removal. We first used the erbium:yttrium-aluminum-garnet laser (Contour; Sciton Laser Corp., Palo Alto, CA, USA) to remove the superficial part of the lesions (spot size: 2 mm, frequency: 10 Hz, and fluence: 2.5 J/cm²), followed by irradiation with the 532-nm Q-switch neodymium-doped yttrium aluminum garnet laser (Medlite C6, HOYA ConBio, Fremont, CA, USA) until bleeding was observed (spot size: 2 mm, frequency: 10 Hz, and fluence: 1 J). Clinical and dermoscopic images were taken with a Nikon D80 camera and Canon D500 camera with the Foto II Pro dermoscopy lens (3Gen LLC, Dana Point, CA, USA) at 0, 1, 3, and 6 months. Two treatment-blinded dermatologists evaluated the pretreatment and posttreatment clinical and dermoscopic photographs. Adverse effects were also recorded.

At 1, 3, and 6 months after one single treatment, 98.48% (65/66) of the MN lesions showed excellent clearance (>75% clearance), except 1 cobblestone MN clinical and dermoscopic complete clearance rates (100%) of all MN and pseudonetwork MN were 89.39% and 92.42%, respectively. One-month posttreatment, postinflammatory hyperpigmentation (12.12%), erythema (6.06%) [Figure 1f], scarring (1.52%), and no hypopigmentation were observed. Only 1 lesion with erythema and scarring was noted at 3 months posttreatment.

In 1 cobblestone MN which was graded as no clearance (0%) [Figure 1j and k], dermoscopy revealed an atypical pigment network, irregular streaks with asymmetric borders at 1 month posttreatment [Figure 1m], and globules at 3 and 6 months after treatment [Figure 1n]. Although 6 lesions (5 pseudonetwork MN and 1 cobblestone MN) had excellent clearance, residual melanocytes were identified on dermoscopy.

Dermoscopic changes of facial melanocytic nevi in Asian skin following laser treatment

Correspondence

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Figure 1: A brown macule is shown on the male patient’s chin (a) before treatment (black arrow) and (b) at 1 month after treatment (black arrow); (c) dermoscopy reveals a pseudonetwork pattern before treatment; and (d) dermoscopy shows globules lying on the network lines (white arrow) at 1 month after treatment. A raised nodule was noted on the female patient’s glabella (e) before treatment; (f) erythema at 1 month after treatment; (g) dermoscopy reveals a cobblestone pattern before treatment; and (h) dermoscopy shows brown globules (black arrow) within the whitish scar (white arrows) at 1 month after treatment. A raised papule is shown below the male patient’s right lateral eye corner (i) before treatment (black arrow), (j) at 1 month after treatment (black arrow), and (k) 6 months after treatment (black arrow); (l) dermoscopy reveals a cobblestone pattern before treatment; and (m) an atypical pigment network, irregular streaks with asymmetric borders at 1 month after treatment, and (n) black (white arrow) and brown globules (gray arrow) are observed 6 months after the treatment.
Dermoscopic changes were observed in 1 pseudonetwork MN with globules lying on the network lines (reticuloglobalular pattern) [Figure 1d] and 1 cobblestone MN with brown globules within the whitish scar at 1 month posttreatment [Figure 1h]. Four pseudonetwork MN retained the same dermoscopic features. Postlaser dermoscopic features of cobblestone MN [Figure 1h, m, n] were difficult to differentiate from those of melanoma. Dermoscopically, recurrent nevi were associated with radial lines, symmetry, and centrifugal growth features. However, recurrent melanomas were strongly associated with circles (especially the face), eccentric hyperpigmentation at the periphery, chaotic and noncontinuous growth features, and pigment traversing the scar’s edge.⁶ Premature evaluation of cobblestone MN should be cautious, and postlaser monitoring of these lesions by dermoscopy is a feasible option. Pseudonetwork MN is frequently observed on the faces of Chinese individuals,⁷ and its features remain unchanged after the laser treatment. Laser can be an optional procedure to remove pseudonetwork MN. One pseudonetwork MN revealed a reticuloglobalular pattern [Figure 1d] after the laser treatment. The pseudonetwork on the face histopathologically correlated with the nevus cells in the epidermis or dermis that are interrupted by follicular or adnexal openings and melanocytes dropped from the epidermis into the papillary dermis during the laser removal. These may explain the reticuloglobalular pattern developing after superficial laser ablation for the upper part of the nevus.

To conclude, (i) laser removal is an effective and safe possibility to treat pseudonetwork MN. Most pseudonetwork MN can be removed without uncertainty of malignancy under dermoscopy. (ii) Postlaser dermoscopic features of cobblestone MN resemble those of melanomas and might be misinterpreted after incomplete laser removal. Although dermoscopy can be used to follow up the recurrence or transformation of residual melanocytes, physicians should be concerned when using lasers for cobblestone MN removal. Further research with more samples is necessary to elucidate the role of lasers in facial MN removal in Asians.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understand that his names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

Mao-Ying Lin, Chrang-Shi Lin,⁶ Wen-Hung Chung,⁴ Sindy Hu ⁴
¹Department of Dermatology, Xiamen Chang Gung Hospital, Xiamen, Fujian, China,
²Department of Dermatology, National Yang-Ming University, Taipei, Taiwan,
³Dr. Lin Skin Clinic, Taipei, Taiwan,
⁴Department of Dermatology, Chang Gung Memorial Hospital, Linkou, Taiwan
⁵Department of Dermatology, Chang Gung Memorial Hospital, Taoyuan, Taiwan

Address for correspondence: Dr. Chrang-Shi Lin, Dr. Lin Skin Clinic, 2F, No 49-1, Tian-Mu West Rd., Shi-Lin Dist., Taipei 111, Taiwan.
E-mail: z3728506@ms37.hinet.net

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