Authors' reply

Sir,

We thank the authors for their interest in our study, and appreciate this opportunity to reply to their comments.[1] In this study, we have described the dermoscopic features in patients with lichen planus pigmentosus on the face, and also performed patch testing in an attempt to ascertain the role of contact allergens in its pathogenesis. As our study was one of the earliest works on dermoscopy of lichen planus pigmentosus, very little information was available at the time of starting our study (January 2013). Now dermoscopic examination of lichen planus pigmentosus and related pigmentary disorders is gaining popularity as is evident from the recent publications.[2-4]

1. We have mentioned the make of the dermoscope used in our study (HEINE Delta mini®), which has nonpolarized illumination only. As is the norm with nonpolarized dermoscopy, an immersion fluid was employed to reduce light reflectance from the skin surface. The dermoscopy oil provided with the dermoscope set (viscous paraffin) was used as immersion fluid.
2. Though the precise difference in the depth of visualization between polarized and nonpolarized dermoscopy is not known, our use of a nonpolarized dermoscope is unlikely to have impacted the dermoscopic evaluation of lichen planus pigmentosus significantly. Vinay *et al.* found the depth of pigment incontinence to be <2 mm in more than half of their cases with acquired dermal macular hyperpigmentation (an umbrella term for lichen planus pigmentosus, ashy dermatosis and Riehl's melanosis), with hardly any case exceeding 4 mm. Further, their polarized dermoscopic findings of acquired dermal macular hyperpigmentation are essentially similar to ours.[3]
3. The color differences between polarized and nonpolarized dermoscopy are slight, therefore different polarization modes may not alter our assessment of lichen planus pigmentosus.[5] Moreover, it is the *pattern* of pigmentary alteration (dots/globules) on dermoscopy, and not its color and hue, which may be clinically meaningful as it has been shown to correlate with the severity and prognosis of acquired dermal macular hyperpigmentation.[4] Interestingly, Pirmez *et al.*, in their study involving 37 patients with lichen planus pigmentosus, performed polarized dermoscopy in some cases and nonpolarized dermoscopic examination in others (exact number not specified) but did not comment on any differences between the two modes.[2]
4. We chose the most representative lesion of lichen planus pigmentosus on face to study the dermoscopic and histological features. Examining particular sites can reduce the topographical variation, but at the same time could miss the more characteristic dermoscopic findings if the predefined sites are not particularly affected clinically in some patients. Nonetheless, this is a pertinent suggestion, and may be considered for similar studies in future.
5. We consciously decided to club all shades of brown color into one to avoid confusion, as color perception is very subjective. In fact, it is recommended to avoid describing shades of brown, blue or gray color to minimize variation in color description among dermoscopists in an attempt to increase the consistency in dermoscopic analysis and when relevant, to classify colors as either predominantly of melanin or not of melanin.[6] The relative importance of color as a diagnostic clue in dermoscopy is put in perspective by Bajaj *et al.,* who suggested placing more importance on the morphological characteristics such as structure and pattern.[7] Clearly, color evaluation in dermoscopy needs further studies, perhaps by blinding a group of expert dermoscopists to the clinical diagnosis as well as to each other's findings. Till then, one should be cautious in using such criteria for distinguishing between largely overlapping entities such as lichen planus pigmentosus and ashy dermatosis.
6. The dermoscopic findings in the other notable studies on facial lichen planus pigmentosus pertain primarily to dots/globules, pseudoreticular network and vascular alterations, with no mention of the background color.[2,3] Whether the light-to-dark brown background color is due to the disease *per se* or due to the patient's inherent dark skin-type would require a formal comparison of dermoscopic features of lesional skin with that of surrounding normal skin. However, we have previously carried out dermoscopic examination of the forehead, cheeks and neck of five healthy controls with Fitzpatrick skin-types IV and V to understand the normal dermoscopic patterns in them. These details were not included in our manuscript as it was done prior to start of the study. Based on our experience, we can say that severity and long duration of lichen planus pigmentosus may contribute to the background color in some cases, such as seen in Figure 4 of our paper.[1]

   We have described the larger dark-colored structures also as "globules" and did not use such terms as "clods" or "blotches" because "clod" is just another descriptive term for "globule," while "blotch" is not a structure but rather a structure-less area having a different connotation.[6] The absence of vascular alterations from our dermoscopic findings can be attributed to our use of a contact dermoscope.
7. We do not project "targetoid structure" as a novel finding in lichen planus pigmentosus. As already mentioned in our study, we believe it to be related to the facial location of the lesions.[1] It is reassuring to know that Vinay *et al.* also observed an identical finding ("owl's eye appearance") with a similar prevalence (7/50, 14% by us; 8/51, 15.7% by Vinay *et al.*).[3] Unlike us, they did not find statistical association with follicular plugging, but still believed that it "likely represents follicular plugs." The correspondents contest that this finding may not represent follicular plugs, but correspond to pigment clusters overlapping with eccrine openings. Figure 6 of our paper[1] shows all the brown dots to be of similar size, shape and color, which are uniformly present only in the center of the white dots. We would expect pigment cluster to be multiple dots/globules of variable size, shape and color, and to be distributed randomly or around the white dots. The emerging vellus hair from some of these white dots suggests at least those to be follicular openings. The other white dots could represent either empty hair follicles or eccrine openings. The larger

vague white areas might be the uninvolved or less involved skin, which is appearing lighter in contrast to the adjacent more pigmented areas.

8. As there is no consensus on whether Riehl's melanosis and lichen planus pigmentosus are two distinct entities or are spectral manifestations of the same disease process, one could argue that our patients with a positive patch test had Riehl's melanosis, and not lichen planus pigmentosus. We were curious to know if there were any dermoscopic differences between the patients with and without positive patch tests, and the potential utility of dermoscopy in differentiating between such overlapping facial melanosis. However, we did not find any significant differences in the dermoscopic findings between these two groups of patients.

Lastly, we feel happy that our study, one of the initial ones on dermoscopic evaluation of lichen planus pigmentosus, has been able to generate interest and stimulate discussion on a relatively new and rapidly evolving technique of examining pigmentary disorders.

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Conflicts of interest
There are no conflicts of interest.

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