LETTER TO THE EDITOR

New insights into lichen planus pigmentosus associated with cicatricial alopecia

Dear Editor,

Lichen planus pigmentosus is a rare variant of classic lichen planus that most commonly affects Fitzpatrick skin phototype III to VI.[1,2] The coexistence of lichen planus pigmentosus and frontal fibrosing alopecia (FFA) was first described by Dlova.[3,4] In this work, we studied lichen planus pigmentosus in female patients with cicatricial alopecia and defined clinical, dermoscopic and histopathological features related to this diagnosis.

A cross-sectional study with patients with biopsy-confirmed cicatricial alopecia and dermoscopic features of lichen planus pigmentosus.[5,6] Patients with dermoscopy and histology features of melasma were excluded.[7] Patients underwent a 2 mm punch biopsy in the zygomatic region, where there were no clinically visible papules. Dermoscopy was performed using FotoFinder (Fotofinder Systems, Inc, Columbia, MD) and polarized light. Histology was undertaken using multiple horizontal sections of each specimen. Statistical analysis was performed with Student's *t*-test and Cramér's V.

A total of 16 patients ranging from 41 to 80 years old presented clinical and dermoscopic patterns of lichen planus pigmentosus associated with biopsy conformed cicatricial alopecia,[5,6] All of them underwent facial biopsy at the zygomatic area. Of all patients, 4 (25%) had phototype IV, 5 (31%) had phototype V, 7 (44%) had phototype VI; 8 (50%) presented FFA and 8 (50%) had fibrosing alopecia in a pattern distribution (FAPD). The diagnosis of FAPD was based on Teixeira *et al*'s criteria.[8] Twelve patients of the total (75%) had facial papules on the forehead and temporal areas.[9]

Brown to grey–blue asymmetric perifollicular hyperpigmentation was the most common dermoscopic finding of facial lichen planus pigmentosus and is strongly associated with the presence of facial papules. Fig. 1a–d shows clinical and histopathological correlations. Cremèr V statistical test found no statistical association between dermoscopy and histopathology findings.

Table 1 shows the histopathology features. The facial hair follicle was involved in 12 (75%) patients, and eight (50%) had melanophages around the hair follicle (Fig. 1e–f).

This work shows that lichen planus pigmentosus may be associated with both FFA and FAPD in Fitzpatrick skin phototype III to VI female patients and may involve the facial hair follicle.

Facial hyperpigmentation may present as melanin aggregates from vacuolated hair follicle basal layer cells. It is possible that darker hair pigmentation in patients with higher skin phototypes may predispose a subset to a more frequent incidence of lichen planus pigmentosus.[2,9]

Mervis *et al.* noted a paucity of facial papules in postmenopausal women with FFA and an association between the presence of facial papules, Hispanic/Latino ethnicity and premenopausal status.[10] This may suggest the possibility for papules to fade after menopause as the perifollicular inflammation resolves and leaves melanophages as a hallmark of the late stages of the disease.[10]

To our knowledge, the observation of lichenoid infiltrate around facial hair follicles in Lichen planus pigmentosus has not been reported in research literature. Lichen planus pigmentosus may coexist with FFA and FAPD. The presence of brown–grey facial and upper eyelid hyperpigmentation, asymmetric perifollicular hyperpigmentation and histopathology showing dermal melanophages and perifollicular lichenoid infiltrate are adequate for establishing the diagnosis of lichen planus pigmentosus in female patients with FFA and FAPD - even without epidermal interface dermatitis.

Hyperpigmentation in lichen planus pigmentosus may be due to the lichenoid inflammation around the hair follicles, which is mostly seen on higher phototypes. Additional studies are warranted to further explain the current understanding of the role of facial hair follicles in the pathogenesis of primary cicatricial alopecias.

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Conflict of interest

The authors have no conflicts of interest to disclose.

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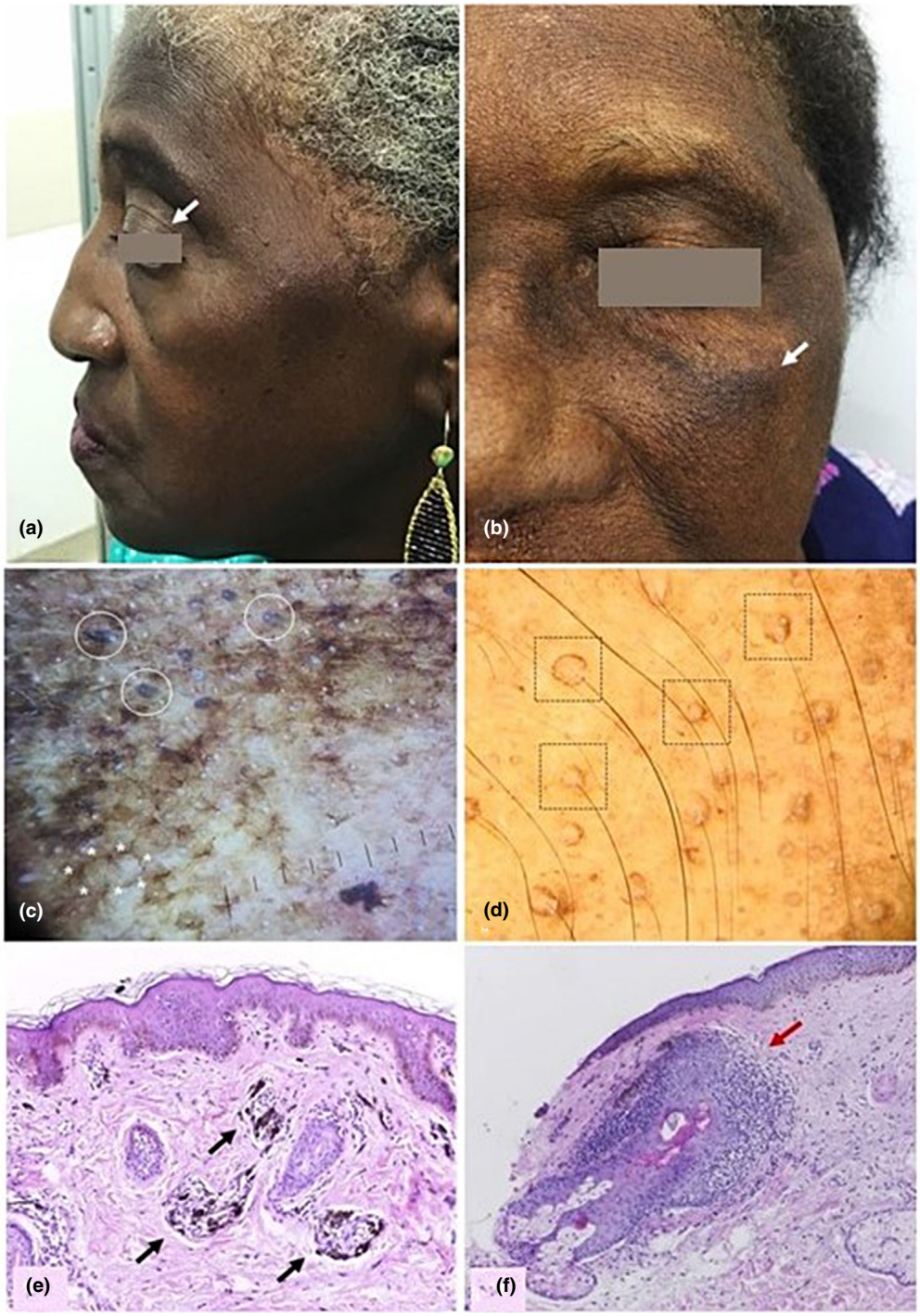

Figure 1 Frontal fibrosing alopecia (a) and fibrosing alopecia in a pattern distribution (b). (c) Dermoscopy of the hyperpigmented upper eyelid (white arrow, a) exhibits rhomboidal structures (asterisks) and perifollicular brown to grey–blue asymmetric pigmentation (circles). (d) Dermoscopy of facial hyperpigmentation (white arrow, b) shows thin facial hairs on the malar region surrounded by perifollicular asymmetric pigmentation (squares). (e, f) Histopathology of facial lichen planus pigmentosus. (e) Several melanophages around a vellus hair follicle in the upper dermis shown by black arrows (H&E, 40×); (f) Dense lymphocytic infiltrate in a lichenoid pattern surrounding an intermediate hair follicle with basal layer interface alteration (red arrow). H&E, 100×.

Table 1 Histopathological features organized according to the structure analysed (epidermis, dermis and follicle) and their respective occurrence in the studied group. Additional findings are listed on the bottom of the table

Histopathological features	Number of patients	%
Epidermis		
Focal vacuolar degeneration of the basal cell layer	3/16	18.75
Hyperpigmentation of the basal layer	6/16	37.5
Lymphocyte exocytosis	0/16	0
Dermis		
Melanophages	16/16	100
Perivascular infiltrate	10/16	62.5
Lymphocytes	9/16	56.25
Histiocytes	1/16	6.25
Plasma cells	1/16	6.25
Solar elastosis	5/16	31.25
Lichenoid infiltration	0/16	0
Follicle		
Hyperpigmentation of the basal layer	9/16	56.25
Lymphocyte exocytosis	11/16	68.75
Lichenoid infiltrate	6/16	37.5
Concentric fibroplasia	3/16	18.75
Perifollicular fibrosis	1/16	6.25
Perifollicular fibroplasia	2/16	12.5
Other findings		
Inflammatory infiltration perifollicular	3/16	18.75
Melanophages in velus	8/16	50

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Hereby, as corresponding author of the manuscript entitled New Insights into Lichen Planus Pigmentosus Associated with Cicatricial Alopecia, I certify, also on behalf of my coauthors, that all the patients involved in our study group have assigned a Consent for Publication Form and accepted to be part of this research project, remaining no doubts left.

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