A Lagging Lock: Hair Cycle Abnormalities in Follicular Vitiligo?

Sir,

Follicular vitiligo is a newly proposed subtype of vitiligo with preferential involvement of hair follicle melanocytes. It bridges vitiligo and alopecia areata.[1] We report a case of follicular vitiligo with an unusual short lock of leucotrichia showing preserved distal pigmentation.

A 32-year-old Indian lady presented with a history of localized short white hair over the scalp for the past 3 months and scalp depigmentation for the past 1 month. There was no history of loss of hair over the area or family history of premature canities. On examination, a well circumscribed 5 cm × 1.7 cm area of depigmentation with a lock of coarse white hair [Figures 1 and 2a] was seen over the frontal region. Patchy hypopigmented macules and few spared black hairs were also present in the depigmented area. Some white hairs showed an abrupt transition to pigmented black hair in the distal shaft [Figure 2b]. Isolated short white hairs without scalp depigmentation were noticed over the vertex [Figure 3]. Hair pull test was negative. Biopsy from the frontal area revealed hair follicles with preserved follicular density, normal anagen:telogen ratio and absence of hair follicle melanocytes. The patient was treated with a combination of topical tacrolimus, topical steroids, and narrow band ultraviolet B phototherapy for depigmented skin and intralesional steroids for depigmented hair.

Follicular vitiligo was described by Ezzedine et al.[2] in 2012 as a new type of vitiligo which mainly affects hair follicle melanocytes with limited interfollicular compartment involvement. They described a young black boy in whom leucotrichia preceded the appearance of depigmented macules. Gan et al.[1] further described a retrospective study of eight cases of follicular vitiligo with leucotrichia both in depigmented vitiligo macules and in normal appearing skin.

White hair grows faster than pigmented hairs in vivo and in vitro.[3] Our patient had follicular vitiligo, but all the depigmented hairs were short suggesting a localized alteration in the hair cycle dynamics associated with the onset of follicular vitiligo. Vitiligo shares clinical and physiopathological similarities with alopecia areata and follicular vitiligo have been suggested as a distinct entity that links the two. Molecular similarities include Th1 mediated immune response with production of interferon-γ, CD8+ T-cell mediated melanocyte destruction in vitiligo and innate-like Tcell mediated hair loss in alopecia areata, increased natural killer cells, and plasmacytoid interferon-α.
producing cells.[1] The hair cycle may be affected in different ways in alopecia areata. Inflammation targeting the hair follicle can cause hair loss by production of dystrophic anagen hairs, truncated rapid cycling of short anagen, and telogen hairs or induce prolonged telogen.[4] In our patient, inflammation might have targeted follicular melanocytes as well as perturbed the hair cycle resulting in the short hairs.

Melanogenesis is strictly coupled to anagen III–VI and a dramatic fall in melanogenesis is a marker of catagen onset.[5] White hair with distal pigmentation in our patient implied abrupt cessation of melanogenesis in anagen with continued hair shaft production. A similar depigmentation of hair with an abrupt transition of brown to white in the hair shaft was reported in Ayrshire calves after local epinephrine injection. Epinephrine-induced depigmentation of hairs was also reported in ACI rats. It was suggested that epinephrine selectively damaged the follicular melanocytes.[6] In vitiligo oxidative stress from increased catecholamines and toxic intermediates of melanin synthesis have been implicated in the initiation or amplification of autoimmunity against melanocytes.[7]

Our patient was an interesting case of the rarely reported follicular vitiligo with changes in the hair cycle dynamics and an abrupt transition to depigmentation in hair shafts. Multiple and sequential biopsies in follicular vitiligo lesions may help in understanding the exact mechanism of hair cycle changes in follicular vitiligo.

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**Conflicts of interest**

There are no conflicts of interest.

**Hima Gopinath, Kaliaperumal Karthikeyan, Meghana Valeti**

Department of Dermatology, Venereology and Leprosy, Sri Manakula Vinayagar Medical College and Hospital, Pondicherry University, Puducherry, India

**Address for correspondence:**

Dr. Hima Gopinath, Department of Dermatology, Venereology and Leprosy, Sri Manakula Vinayagar Medical College and Hospital, Madagadipet, Puducherry - 605 107, India.

E-mail: hima36@gmail.com

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**Letters to Editor**

**Sir,**

Dutasteride is used off-label worldwide in the treatment of androgenetic alopecia (AGA) and has proved its efficacy in different studies.[1] Mesotherapy using dutasteride (MD) has...