

Follicular vitiligo: the present clinical status

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ABSTRACT

Vitiligo is a common autoimmune inflammatory disease where there is damage to the basal melanocytes of the epidermis. Hair follicles are the main reservoir of the melanocytes, and melanocytes stem cells, and these cells will supply the melanocytes for the basal layer of the epidermis when these cells are lost. But when these follicular melanocytes are damaged, this will cause follicular vitiligo either in a form gray/white hair or in form of follicular leukoderma. Although follicular vitiligo is not uncommon variant of vitiligo but rarely discussed and classified.

Key words: Follicular vitiligo; Follicular leukoderma; Follicular pigmentation

INTRODUCTION

Although the etiopathogenesis of vitiligo is still not well formulated but many findings, clinical and immuno-pathological are in favor of autoimmune theory singly or in combination with other etiological factors [1-5].

As a result of this autoimmune reaction, there will be loss of melanocytes from basal layer of the epidermis and the disease will be recovered when there are supply of new melanocytes from the hair follicles or from the residual melanocytes or its stem cells of the epidermis to reach the basal layer of the epidermis [1,5-8].

In some cases of vitiligo, hair follicles will lose their melanocytes resulting in follicular vitiligo [1-4,6-8].

So hair follicle are considered as a reservoir for melanocytes and as has been shown, there are many stem cells in the hair follicles especially in the permanent area of hair follicles so called bulge area and the outer root sheath. These stem cells are melanocytes stem cells, epithelial stem cells and neural crest stem cells, but the most important one is melanocytes stem cells which are closely related with epithelial stem cells. [9,10] Under critical conditions of epidermal melanocytes loss, these stem cells will proliferate,

differentiate and move along the outer root sheath to reach the basal layer of the epidermis [9-11].

The hair follicles melanocytes appear more resistant to damage by de-pigmenting conditions like vitiligo, chemical leukoderma, occupational vitiligo and burn leukoderma. In these conditions the melanocytes and melanocyte stem cells of hair follicles will remain alive and active and ready to supply melanocytes to the white areas. In these conditions, hair follicle melanocytes will proliferate making functional cells for the basal epidermis, hence inducing active melanogenesis for the epidermis [9-11].

So following the treatment of these leukodermid conditions, we will see first follicular pigmentation and then re-pigmentation of the whole white abnormal areas (Figs. 1 and 2).

In cases of localized vitiligo when treated by melanocytes transplantation using needling micro-grafting technique, the vitiliginous skin will be covered by melanin in the first month following surgery while the white hair in these vitiliginous areas will take four months to be regimented. In these cases the melanocytes will make reverse journey to travel from basal layer of the epidermis into the outer root sheath, then move down to settle in the

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hair matrix in order to induce neomelanogenesis of the hair shaft [13,14].

FOLLICULAR VITILIGO

In ordinary vitiligo, commonly there is destruction of the basal melanocytes of the epidermis but in certain clinical conditions, there are also damage to hair follicles melanocytes that give rise either to gray/white hair or to follicular leukoderma of the skin [1-8], and all these conditions could be classified as follow:

Premature Grayness of Hair

This condition commonly appears before the age of 40 years and usually gives a diffuse pattern grayness of scalp hair with or without of facial hair but in some cases the picture will be in form of patchy grayness of the hair rather than in diffuse form. The pigment loss of hair matrix either will appear either as partial pigment loss so called early stage I depigmentation where the patients will notice a bunch of blond like (Fig. 3) hair rather than white hair while in late stage II of pigment loss, there is complete loss of hair shaft pigmentation and the patient will present with gray/white hair [2-4,9-12,15].

Follicular Vitiligo that is Associated with Ordinary Vitiligo

In these cases, grey hair has been seen in 15% of case of vitiligo where the patients will notice gray/white hair in the vitiginous areas [2-4,9-12,15-18].

In cases of gray hairs, the grafted melanocytes will move from regimented epidermis into the outer root sheath then move down to reach the hair matrix thus inducing pigmented hair [13,14].

Follicular Vitiligo in Segmental Vitiligo

Where melanocytes of hair matrix of hair follicles are commonly involved causing grey/white hair in combination with vitiligo of proper skin (Fig. 4) [1-4,9-12,15-18].

Follicular Vitiligo in a form of the Grayness of the Body Hair

It is seen in combination with ordinary vitiligo, and this condition has been reported to involve the coarse hair follicle of the body presenting with whitening of the body hair [1-4,15-20].



Figure 1: Patient with vitiligo showing a follicular repigmentation.



Figure 2: Showing follicular repigmentation of burn leukoderma.

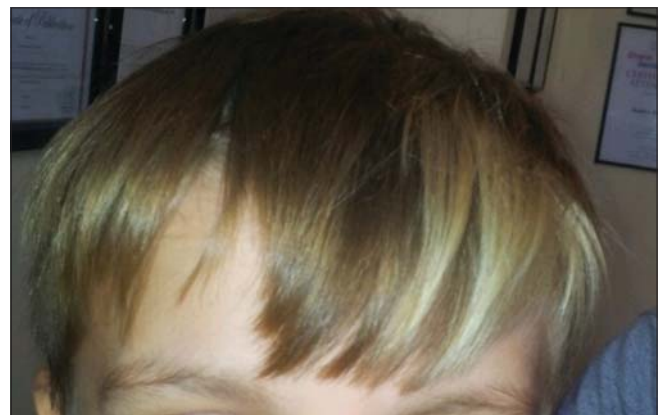


Figure 3: Showing child presented with a bunch of blond hair in case of vitiligo of the scalp hair.

Recently

We noticed cases of vitiligo where the patients presented with follicular leukoderma where there is melanin loss of the skin at the hair follicles orifices



Figure 4: Showing a segmental vitiligo with gray/white hair.



Figure 5: Showing follicular leukoderma of the trunk hair follicles coalescing together to form patches of ordinary of vitiligo.

first and then these follicular leukoderma will coalesce together to form ordinary vitiligo (Fig. 5).

In this type so called follicular leukoderma we assume that there is damage to the melanocytes of the outer root sheath rather than that of the hair matrix then might be followed by loss of hair matrix melanocytes resulting into grey hair.

CONCLUSION

Follicular vitiligo is not uncommon variant of vitiligo where there is damage to the hair matrix melanocytes and the patient will present with gray/white hair which commonly seen in segmental or non-segmental vitiligo or the destruction will involve the melanocytes of the outer root sheath and the patient will present with follicular leukoderma which gradually coalesce together to end with ordinary vitiligo.

Consent

The examination of the patient was conducted according to the Declaration of Helsinki principles.

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