
Treating benign halo nevus and focal vitiligo with topical tacrolimus: A brief report

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Abstract: Three patients had been suffering from benign halo nevus and focal vitiligo. They were treated with topical tacrolimus for 12 months. Remission was achieved in both the diseases. Pigmented moles of the halo nevi were unchanged and no harm was incurred to the patients. There was minimal self-limiting side effect from the tacrolimus.

Keywords: Benign Halo Nevus, Focal Vitiligo, Treatment, Topical Tacrolimus

1. Introduction

Development of acquired idiopathic white patch on the normal skin and mucous membrane is called vitiligo and appearance of single or few white patches in a limited body area is known as focal vitiligo. On the other hand, development of white patch around a congenital or acquired nevocellular nevus is called halo nevus and we define, non-associated (particularly with malignant melanoma) halo nevus, as benign halo nevus. Halo nevus may occur in association with vitiligo in 26% cases¹. Both of them could be benign in nature and self-limiting having an unpredictable course². In our country, both the diseases are associated with intense psycho-social suffering that warrants patients seeking active treatment. Safety and efficacy of tacrolimus in treating vitiligo is reported³ and by this time, we have acquired good experience in treating halo nevi, and residual white patches of resolved halo nevi with topical tacrolimus. Thus we decided to use it in our field trial.

2. The Cases

2.1. The First Case

A female of 18 years came with the complaint of development of white patch around an acquired mole over left medial arm and few white patches over left shoulder, breast, and nipple. She had been suffering from this for last 5½ years without any noticeable change in them. On clinical

evaluation, it was a halo around a tiny acquired mole. She was otherwise healthy. She was diagnosed as having benign halo nevus with focal vitiligo. She was anxious and apprehensive about the prospect of her future marriage. She denied pictorial recording and skin biopsy. She was put on tacrolimus ointment 0.1%, twice daily for 12 months (March, 2008-February, 2009). Quarterly clinical follow up was given. At the end of 12 months, complete re-pigmentation was seen around the mole (without any change in it) and in all the white patches except nipple. Slight yellowish tint appeared in the nipple but there was no convincing re-pigmentation. She noticed self-limiting erythema from tacrolimus during first few weeks of treatment. No recurrence is seen till to date. Nipple lesion remained as it was at the stoppage of treatment.

2.2. The Second Case

A female of 28 years came with the complaint of multiple halo nevi over upper back with few white patches over central chest and both breasts. She had been suffering from last nine months and did not notice any change in lesions. On examination, halos found around multiple small benign acquired moles. She was otherwise healthy. She was diagnosed as having benign halo nevus with focal vitiligo. However, she was distressed from resultant familial disharmony. She denied pictorial recording and skin biopsy. She was put on tacrolimus ointment 0.1%, twice daily for 12 months (June, 2011-May, 2012). Six monthly clinical follow up was given (because, it was difficult for her to attend our clinic from her father-in-laws house). At the end of the

course, complete re-pigmentation was seen in all the halo nevi without any change in the moles and in all white patches. She noticed self-limiting erythema and scaling from tacrolimus during first few weeks of treatment. No recurrence is seen till to date.

2.3. The Third Case

A boy of nine years came with the complaint of few de-pigmented patches over right upper eyelid, left pinna, left upper chest and around a congenital nevocmelanocytic nevus (please omit measurement→17mm x 7mm) over his right forehead (Fig-A). The nevus was asymptomatic and symmetric in color and shape with regular margin. He had been suffering from last six months and it was static. A full mucocutaneous examination had been done. We did not get any abnormality in him apart from the de-pigmented patches as mentioned above. However, we found apprehension and mental distress in his parents. We took 5 mm punch biopsy from nevus for histopathology and immunohistochemistry for HMB45 antigen before treatment. Histopathology revealed typical compound nevus and immunohistochemistry was negative of HMB45 antigen. He was diagnosed as having benign halo nevus with focal vitiligo.



Fig-A. De-pigmented patch in and around a congenital nevocmelanocytic nevus (17mm x 7mm) over right forehead. There are de-pigmented patches over his right upper lid.



Fig-B. Same patient after 12 months treatment with tacrolimus. Complete remission of all vitiligo patches and halo nevus is achieved with congenital nevocmelanocytic nevus unchanged. The symmetry in color and shape, and border regularity of the nevus is maintained. A notch in upper border is due to punch biopsy.

He was treated with topical tacrolimus 0.1% ointment, applied twice daily for one year (September, 2011-August, 2012). Quarterly follow up was given. With our treatment, it took 4 months to disappear lid lesion, 6 months for the pinna and chest lesions, and 12 months for halo around the nevus and there was no change in nevus (Fig-B). We did not notice any side effects from tacrolimus. We delivered clinical follow up quarterly for last 25 months after stoppage of our treatment. We found him in remission and fine.

They were treated in one of our university clinics. Our project proposal of limited therapeutic clinical trial was approved by the Institutional Review Board of the university.

3. Discussion

Our patients were afflicted with benign halo nevus and focal vitiligo simultaneously. They received topical tacrolimus and got remission of both the diseases leaving behind the nevocmelanocytic nevi unchanged.

Halo nevus may be associated with malignant melanoma⁴ and there may be circulating antibody against the cytoplasm of malignant melanoma cell in patients with resolving halo nevus⁵. However, there is also benign halo nevus among the total patient pool in the community. Innocent clinical appearance, typical histology and negative special stain may help us to identify them in the field situation, as was in our cases.

Benign halo nevus and its association with focal vitiligo is not an uncommon occurrence. Self-healing is an important attribute for both the diseases. Unfortunately, it was not seen in our cases, though they had been suffering from months to years. Instead, their diseases became the source of intense psycho-social suffering and threaten familial harmony and happiness. Thus, patients sought active treatment.

Efficacy and safety of tacrolimus in vitiligo is reported³. Though the treatment of halo nevus is controversial, we brought their halo nevus under the same treatment having seen its benign nature. Both the diseases responded well keeping pace with duration of the course indicating beneficial effect of tacrolimus in treating them. Moreover, it is interesting to see their positive response to it though they were etio-pathogenically different entities.

Tacrolimus is a macrolide immunomodulatory and immunosuppressant agent. It inhibits T-lymphocyte activation by blocking the action of calcineurin which results in inhibition of the transcription of several cytokine genes with consequent decrease in the production of interleukins, interferon-gamma and tumor necrosis factor- α ⁶. Perhaps, tacrolimus ointment by exerting specific (Please replace modulatory by modulating) effect on cytokines might have caused re-pigmentation in vitiligo, and resolution of inflammation and re-pigmentation of halo nevus though the exact mechanism is not known.

In conclusion, benign halo nevus associated with focal vitiligo could be treated with topical tacrolimus effectively and safely.

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