Ann Dermatol Vol. 24, No. 1, 2012 http://dx.doi.org/10.5021/ad.2012.24.1.99

LETTER TO THE EDITOR

Eczema Confined to Becker's Nevus on the Face: The Behavior of Melanocytes during Inflammation

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Dear Editor:

Becker's nevus is a unilateral, hyperpigmented hairy cutaneous hamartoma. Becker's nevi are commonly associated with several structural anomalies and cutaneous diseases[1-5]. They may be related to the presence of increased androgen receptors and/or mosaicism or be associated with the isotopic response phenomenon. Eczematous dermatitis associated with Becker's nevus is quite rare and described in only one case report. Herein, we describe a second case of eczema confined to Becker's nevus on the face. In addition, the melanocytes in Becker's nevus had the morphologic appearance of activated cells, a phenomenon which may have been due to inflammation.

A 47-year-old man visited our clinic due to a pruritic, lichenified plaque overlying a hyperpigmented, hypertrichotic area on his left cheek. The hyperpigmented, hypertrichotic lesion had been present since around puberty and remained asymptomatic until 1 year prior to his arrival; at that time the pruritic lesion appeared. Physical examination revealed a lichenified plaque confined to the hyperpigmented, hypertrichotic patch on the left side of the patient's face (Fig. 1). A 3-mm punch biopsy was performed, and the histological findings were consistent with chronic eczema (Fig. 2A) coexisting with Becker's nevus (Fig. 2B). Interestingly, NKI/beteb staining showed hyperactivated dendritic melanocytes in the epidermis (Fig. 2C), which is not common in an ordinary Becker's nevus. The Becker's nevus is currently being treated with 5 sessions of fractional CO_2 via laser therapy and is improving.

Becker's nevi have been associated with several skin and structural anomalies. Cases of acneiform eruption, breast hypoplasia, smooth muscle hyperplasia, and hypertrophy of the sebaceous glands are reported to have been localized in Becker's nevi; this phenomenon is thought to be related to an increased level of androgen receptors in Becker's nevi[1,2]. Genetic mutation or mosaicism may contribute to the development of skin disorders, such as hypohidrosis colocalized with Becker's nevus[3]. Skin diseases, such as lichen planus and prurigo nodularis, have also been reported to be associated with Becker's nevi[4,5]. These occurrences may explain Wolf's isotopic response, which is the appearance of a new skin disorder at the exact site of another, unrelated skin disease that has long since healed. Our case, lichen simplex chronicus associated with Becker's nevus, may represent this isotopic response. The mechanism behind isotopic response is poorly understood[6].

Occurrence of a localized halo eczematous eruption surrounding acquired melanocytic nevi was first described by Meyerson in 1971 and was termed the Meyerson phenomenon or Meyerson's nevi[7]. This phenomenon is characterized by hypopigmentation around the involved nevi which clears after a few months. Our patient showed an eczematous eruption localized on Becker's nevus, but no surrounding halo like that seen in Meyerson's nevi was present. Therefore, our case is not considered to be Meyerson's nevi but an isotopic response.

Melanocytes may respond to cutaneous inflammation. Inflammation-related factors, such as prostaglandins, histamine, and alpha-MSH may be responsible for the activation of melanocytes[8]. Our case clearly showed *in vivo* evidence of melanocytic activation during inflammation. The cells were large and dendritic, suggesting that the eczematous skin inflammation activated epidermal mel-

Received November 9, 2010, Accepted for publication January 6, 2011

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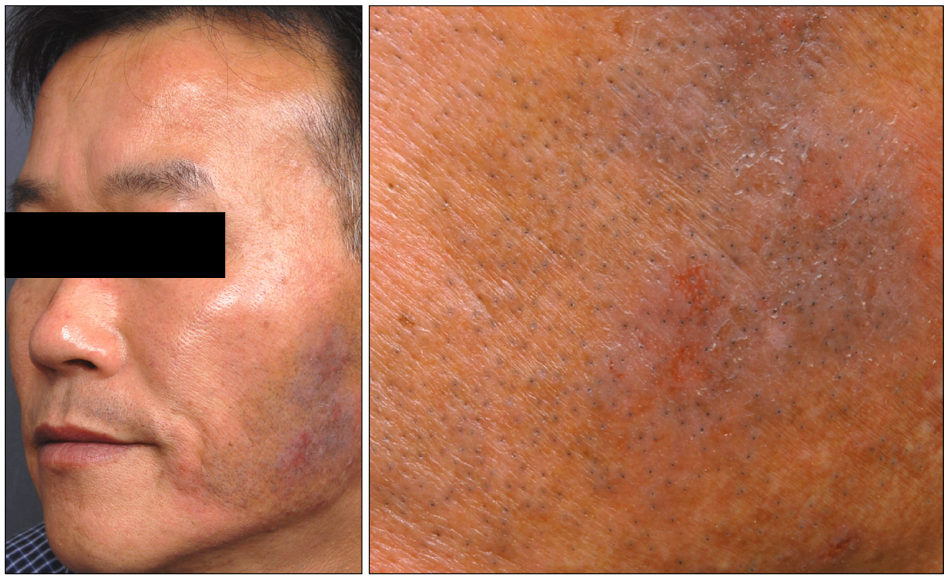

Fig. 1. Eczematous lesion coexisting with Becker's nevus.

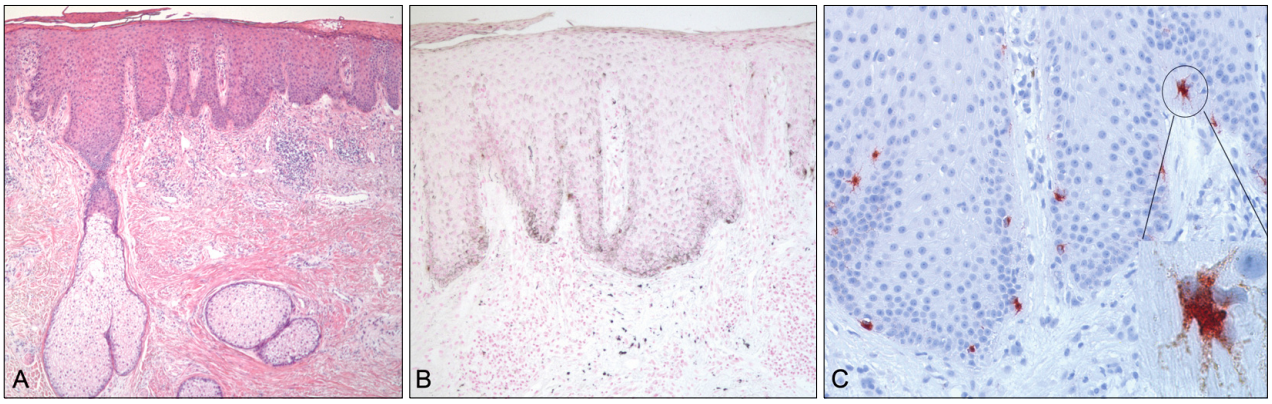

Fig. 2. (A) H&E staining showed epidermal acanthosis with parakeratosis and superficial perivascular lymphohistiocytic infiltration in the upper dermis, consistent with chronic eczema (Original magnification ×50). (B) Hyperpigmentation of the basal layer and numerous melanophages in the upper dermis, consistent with Becker's nevus (Fontana-Masson, original magnification ×100). (C) NKI/beteb staining showed hyperactivated dendritic melanocytes in the epidermis (Original magnification ×200).

anocytes.

In conclusion, eczematous dermatitis localized in Becker's nevus represents an isotopic response, and cutaneous inflammation may activate melanocytes.

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