Nevoid Acanthosis Nigricans Localized to the Umbilicus: Successful Treatment with Topical Tretinoin

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Nevoid acanthosis nigricans (AN) is a rare form of AN, which can manifest as a characteristic nevoid appearance at any age before puberty. We report a case of nevoid AN localized to the umbilicus, of which topical application of 0.1% tretinoin cream, two times daily for 2 weeks, produced a complete resolution. (Ann Dermatol 17(1) 24~26, 2005)

Key Words: Acanthosis nigricans, Tretinoin, Treatment

INTRODUCTION

Acanthosis nigricans (AN) is characterized by hyperpigmentation and papillary hypertrophy, which are symmetrically distributed. The regions affected may be the face, neck, flexor surface of the extremities, anus or the umbilicus. Nevoid AN is a rare form of AN that shows a unilateral and localized manifestation and has morphologic features similar to other forms of AN. It is not associated with any known syndrome, endocrinopathy, drugs or cancer[1]. But it is known that AN is difficult to treat and that the principal management should be directed to the underlying problem[1]. Here, we report an interesting case of a nevoid AN, localized to the umbilicus, which was treated successfully with 0.1 % tretinoin cream.

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CASE REPORT

An 18-year-old female presented with an asymptomatic, dark-brownish plaque on the umbilicus. At the age of 16, a small-pigmented patch appeared on her abdomen, which slowly increased in size over a 2-year period. She was not obese and had regular menses. She had not taken any medication over the past 3 years, and her family history was unremarkable. The physical examination revealed a hyperpigmented, papillomatous and velvety plaque on the umbilicus (Fig. 1A). No other cutaneous or mucosal findings were present. Routine laboratory evaluations including a complete blood cell count, serum chemistry, urine analysis and plasma glucose level showed no abnormalities. A biopsy specimen revealed hyperkeratosis and a slight acanthosis undulating with dermal papillomatosis in the epidermis, and a mild perivascular lymphocytic infiltration in the superficial dermis (Fig. 2). On the basis of these clinical and histological findings the patient was diagnosed with nevoid AN.

Topical 0.1% tretinoin (Stieva-A®) cream was applied twice daily, and two weeks later a dramatic clearing of the nevoid AN was noted (Fig. 1B). The patient experienced no adverse effects and was generally pleased with this topical treatment. The condition was then controlled successfully for 2 months with a daily application of tretinoin.

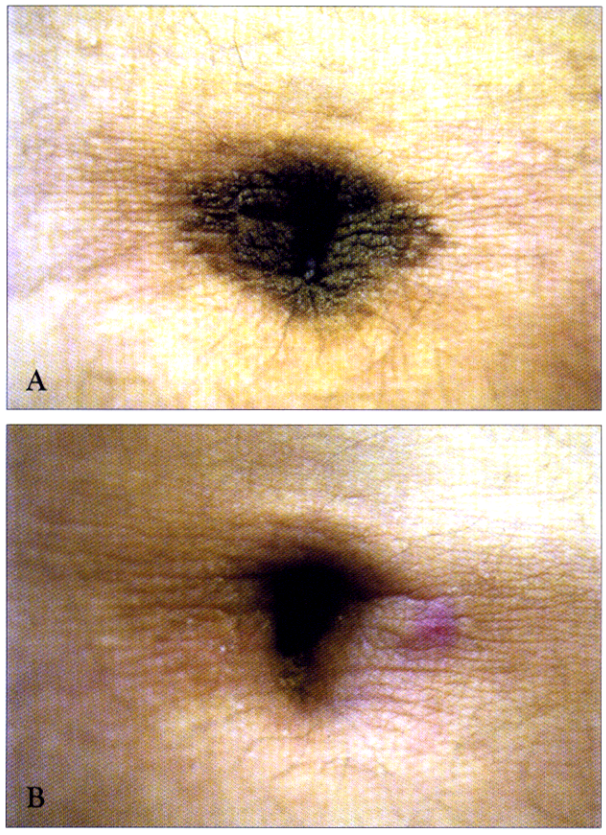

Fig. 1. (A) Asymptomatic, dark-brownish, papillomatous and velvety plaques on the umbilicus. (B) Clinical resolution of the lesion of AN after 2 weeks of topical treatment with 0.1% tretinoin cream.

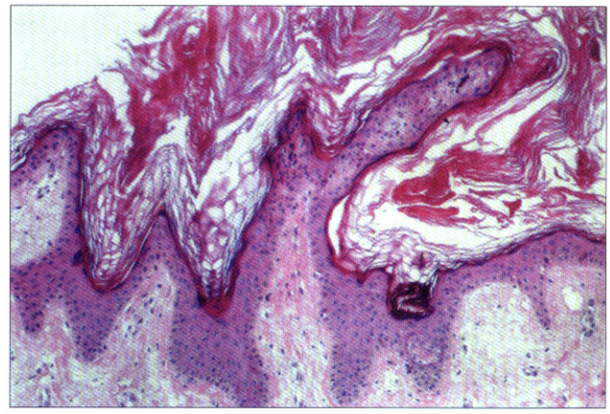

Fig. 2. Hyperkeratosis, papillomatosis and slight acanthosis is noted in the epidermis, and a mild perivascular lymphocytic infiltration is noted in the superficial dermis (hematoxylin and eosin stain; ×100).

DISCUSSION

Nevoid AN is a very rare benign form of AN with a localized distribution manifesting at birth, childhood or puberty[1,3]. It tends to enlarge for a time and then remains stable or it can regress[1,3]. Nevoid AN has been reported as a unilateral presentation, which was called a unilateral AN[1,2]. Thus far, only 2 cases, including our case have presented with a bilateral and symmetric distribution. It is interesting that both these cases occurred on the middle of the abdomen including the umbilicus[7].

Specific treatment guidelines do not exist, partly because of the unknown pathogenesis of this disorder and its rarity. As the lesions are not bothersome to the patient, the indication to treat may most often be for cosmetic improvement, and the clinical brown color is likely a result of hyperkeratosis. So the possible treatments for nevoid AN include topical application of keratolytic agents, podophyllin, calcipotriol or retinoids, cryotherapy, dermabrasion, laser or excision for small lesions[1]. Considering the benign nature of the disease, simple treatments with cosmetically acceptable results and few side effects should be tried first.

Topical retinoids are inexpensive and easily available, and they have been used to treat AN with varying success. Berger and Gross[4] reported the dramatic resolution of an obesity-related AN in an 18-year-old female patient using a twice daily application of topical 0.1% tretinoin cream. A decrease in the dense hyperpigmentation and a marked decrease in the hyperkeratotic verrucous lesion was noted within two weeks. Montes et al.[5] reported on an AN which showed a complete response, grossly and histologically, within 2 to 4 weeks of starting twice daily treatments with topical 0.1% tretinoin and Darmstadt et al.[6] treated an AN case with topical 0.1% tretinoin gel; this case had developed following the treatment of hypercholesterolemia with nicotinic acid.

The effects of topical tretinoin on the epidermis include the induction of epidermal mitotic activity and the shedding of desmosomes and tonofibrils. These actions are known to result in less cohesiveness among keratinocytes, enabling them to be shed more easily from the corneal layer. Consequently, shedding of hyperkeratotic squamae accounts for the flattening and loss of hyperpigmentation of the lesion[6].

Our case is rather unique in that the nevoid AN

occurred on the umbilicus, an area which is seldom affected in isolation. The dramatic response to topical tretinoin was, however, gratifying. No side effects have yet been noted, and its positive effects appear to last for as long as tretinoin therapy is continued. Although AN is difficult to treat and the principal management should be directed at the underlying problem, our case illustrates that the therapy with topical tretinoin should be considered first.

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