

Treatment of Occupational Koilonychia with Tazarotene Gel

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Sir,

Koilonychia is a syndrome characterized by eversion of the edges of the nails, while the central portion of the nail becomes concave. This dystrophy usually involves several fingers, especially the thumb. The underlying tissues may either be healthy or affected by subungual hyperkeratosis. Classification of koilonychia includes idiopathic forms (hereditary and congenital, sometimes associated with other anomalies) as well as acquired forms (secondary to avitaminoses, dermatoses, kidney transplantation, carpal tunnel syndrome, cardiovascular and haematological disorders, infections, endocrine disorders, traumatic and occupational forms) (1). The first three digits are frequently involved in occupational forms of koilonychias, probably because they are more exposed to pressure during handwork (1). Tazarotene is an acetylenic retinoid selective for retinoic acid receptors (RAR α) and is approved as a topical treatment for psoriasis (2). It has a strong antiproliferative effect and it modulates keratinocyte differentiation (3). We

present a case of occupational koilonychia treated with tazarotene 0.1% gel.

CASE REPORT

A 54-year-old patient presented with a 3-year history of koilonychia of the thumb of the right hand, with the subsequent appearance of koilonychia on the third finger of the same hand. The patient had worked as a bricklayer for many years, while in the past year had been employed in an office. During the last 12 months, the patient experienced emotional distress due to further progression of the disease, with the appearance of koilonychia also on the second digit of the right hand and on the left thumb (Fig. 1A).

On physical examination, the nails presented both a distomedial and a lateral subungual hyperkeratosis, with the distal edges of the nails everted and the distal central portion of the nails concave. There were no signs of psoriasis, lichen planus or anaemia. The nail substance was firm, and there were no clinical or

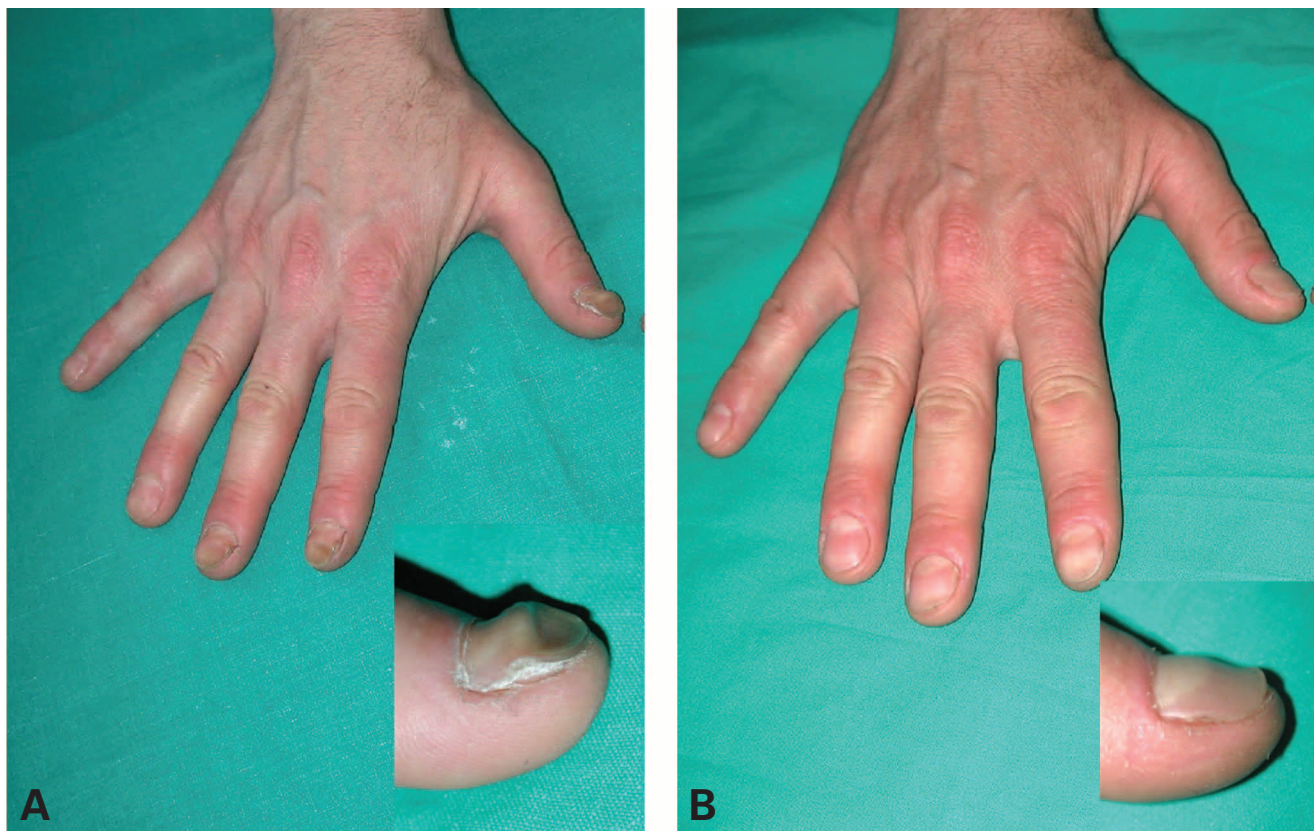


Fig. 1. Koilonychia of the first three digits of the right hand before treatment (A). (The insert shows a close-up of the right thumb). After 2 months of treatment with tazarotene 0.1% gel, a remarkable reduction of the subungual hyperkeratosis was observed (B). (Insert: A close-up of the right thumb).

laboratory signs of mycosis. A radiogram of the thorax and an electrocardiogram were normal. A clinical diagnosis of koilonychia secondary to cement dermatitis was made.

After the informed consent of the patient was obtained, treatment with topical tazarotene 0.1% gel was started. The gel was applied, unoccluded, on the affected nails every evening and was left in place overnight. After 2 months of treatment, a remarkable reduction of the subungual hyperkeratosis was observed and complete remission was obtained after 4 months of therapy (Fig. 1B). Tazarotene 0.1% gel was well tolerated and no treatment-related adverse event was observed. During 8 months of subsequent follow-up, no signs of koilonychia were observed.

DISCUSSION

In our patient, a diagnosis of koilonychia secondary to cement dermatitis was made on the basis of the appearance of the nails of the patient, his history of a previous occupational activity as a bricklayer, and the normal laboratory findings. Cement dermatitis may be allergic due to the dichromate content, or may result from alkaline irritation and burns (4). Dermatitis of the dorsum of the proximal nail fold and koilonychia are frequent. Koilonychia due to cement dermatitis is usually accompanied by distolateral subungual hyperkeratosis lifting the lateral edge of the nail (5).

In the past year, although the patient has been working in an office without exposure to any mechanical stress of the fingertips, the nail changes worsened. Similar cases of occupational koilonychia persisting after elimination of the occupational trauma have been reported previously (6).

Up until now, no treatment of occupational koilonychia has been reported, except for avoidance of the activities potentially involved. One recent study reported

the efficacy and tolerability of tazarotene 0.1% gel in 31 patients with fingernail psoriasis (7). Moreover, in our clinic we have observed the efficacy of tazarotene in 25 patients with fingernail psoriasis (8). These promising findings prompted us to treat this case of koilonychia with tazarotene 0.1% gel.

In conclusion, this preliminary observation suggests that the local administration of tazarotene may represent a new treatment strategy in patients affected by koilonychia.

REFERENCES

1. Baran R, Dawber RPR, de Berker DAR, Richert B. Physical signs. In: Baran R, Dawber RPR, de Berker DAR, Haneke E, Tosti A, eds. Baran and Dawber's diseases of the nails and their management. Oxford: Blackwell Science, 2001: 52–54.
2. Weinstein GD, Kruegger GG, Lowe NJ, Duvic M, Friedman DJ, Jegasothy BV, et al. Tazarotene gel, a new retinoid, for topical therapy of psoriasis: vehicle controlled study of safety, efficacy, and duration of therapeutic effect. *J Am Acad Dermatol* 1997; 37: 85–92.
3. Chandraratna RAS. Tazarotene, first of a new generation of receptor-selective retinoids. *Br J Dermatol* 1996; 135 (suppl): 18–25.
4. Rycroft RJG, Baran R. Occupational abnormalities and contact dermatitis. In: Baran R, Dawber RPR, de Berker DAR, Haneke E, Tosti A, eds. Baran and Dawber's diseases of the nails and their management. Oxford: Blackwell Science, 2001: 336–337.
5. Calnan CD. Cement dermatitis. *J Occup Med* 1960; 2: 15.
6. Pedersen NB. Persistent occupational koilonychia. *Contact Dermatitis* 1982; 8: 134.
7. Scher RK, Stiller M, Zhu YI. Tazarotene 0.1% gel in the treatment of fingernail psoriasis: a double-blind, randomized, vehicle-controlled study. *Cutis* 2001; 68: 355–358.
8. Bianchi L, Soda R, Diluvio M, Chimenti S. Tazarotene 0.1% gel in finger and toenail psoriasis: a prospective open study. *Br J Dermatol* 2003 (in press).