

# Usage of unsaturated esters of retinol to defeat Hopf's acrokeratosis verruciformis in hands and feet of a young man

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Sir,

Hopf's Acrokeratosis verruciformis is a rare genodermatosis with an autosomal dominant mode of inheritance. Acrokeratosis verruciformis is a disorder of keratinization characterized by multiple flat-topped, skin-colored keratotic lesions resembling plane warts typically observed on the dorsum of the hands and feet. Hopf first suggested the name acrokeratosis verruciformis in 1931 [1].

Lesions identical to those of acrokeratosis verruciformis are also observed in many patients with acral Darier disease (also termed keratosis follicularis) or even in relatives of individuals with Darier disease. Considerable controversy surrounds the nature and relationship of acrokeratosis and Darier disease and whether they are manifestations of one genetic abnormality. Some authors suggest that acrokeratosis verruciformis of Hopf and Darier disease are distinct entities, while others maintain that they are variable expressions of the same disease, with the former being a mild expression or a forme fruste of the latter. Recent genetic studies review show these may be distinct entities that are allelic variants [2].

Darier disease (keratosis follicularis) is the most important disorder to be distinguished from acrokeratosis. Darier disease, acrokeratosis verruciformis, epidermodysplasia verruciformis, plane warts, and seborrheic keratoses can be differentiated on the basis of histologic examination findings from biopsy samples from individual lesions. The hard nevus of Unna can be differentiated clinically on the basis of its late onset [3].

Acrokeratosis verruciformis is usually present at birth or manifests in early childhood. Onset may be delayed until the fifth decade of life.

Lesions tend to persist throughout life and become more prominent following prolonged sun exposure.

The only effective treatment is superficial ablation. Treatment is not generally recommended, but medical and surgical treatments have been tried. Applications of retinoids [4] have been helpful in some individuals. Oral natural vitamin A derivatives have also been reported to have some success. Destruction of the lesions with cryotherapy or laser, especially destructive lasers such as a carbon dioxide laser, may be used. Untreated lesions persist and become more noticeable after prolonged sun exposure because of darkening.

We describe the case of a 21-year-old man who came in our clinic with skin-coloured, flat, warty papules localized to the dorsum of the hands and feet. Both clinical and histological findings were compatible with acrokeratosis verruciformis.

Skin biopsy was performed and histological examinations showed acanthosis with mild papillomatosis.

There was also hyperkeratosis marked at the edge of the lesions with slight hypergranulosis and a very thin film of orthokeratosis.

The circumstant dermis was infiltrated with mild inflammatory cells surrounding the vessels.

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Both clinical and laboratory findings had showed the presence of a real Hopf's Acrokeratosis verruciformis.

Patient was treated the case with retinoids, but not retinyl palmitate or acetate, but the unsaturated one: the linoleate, because it has been demonstrated that even in the diet the usage of unsaturated acids is preferable to saturated acids to combat all types of dermatitis [4]. We suggested to him to take every day of the treatment even a food supplement (capsules containing 10,000 International Units of Retinyl palmitate).

The applications were to be done three times per day for 12 days and we have repeated the clinical and the lab tests after 12 days. We observed that skin-colored, flat, warty papules localized to the dorsum of the hands and feet were fully disappeared, i.e., we repeated the skin biopsy and now the histological examinations showed no more acanthosis and/or papillomatosis. We did not notice hyperkeratosis at the edge of the lesions and hypergranulosis was absolutely absent. No types of inflammatory cells surrounding the vessels were noticeable.

Many researchers have revealed that the stratum corneum penetration (called Emax) tends to increase with the octanol solubilities of the fatty acids to be spreaded onto skin and decrease with their lipophilicities [5].

Unsaturated acids are less lipophilic (minor octanol partition coefficient) than saturated ones and since Emax of solid fatty acids has been shown to depend on their melting points, linoleic acid presents a melting point lower (-5°C) than acetic (16.6) or palmitic acid (62.9) [6].

The lipophilic lotion we have applied by our patient was retinyl linoleate (15%) in sesamum indicum oil.

### Statement of Human and Animal Rights

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008.

### Statement of Informed Consent

Informed consent was obtained from all patients for being included in the study.

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