

Multiple minute digitate hyperkeratosis affecting the face and folds: clinical, dermoscopic, and histological report of a familial case

Osvaldo Correia^{1,2} ✉, Natividade Rocha¹, Eckart Haneke^{1,3}

Abstract

A case of a generalized non-follicular digitate keratosis classified as multiple minute digitate hyperkeratosis is described with suggestive clinical, dermoscopic, and histopathological data. The patient was a 52-year-old Caucasian woman presenting a 6-year history of multiple asymptomatic skin-colored digitate lesions, 3 to 5 mm long and 1 to 2 mm wide, distributed on the forehead, neck, and extensor surface of the arms as well as in the inframammary folds, axillae, and lower limbs, especially on the popliteal fold. She reported having a 67-year-old sister and a 39-year-old niece with an identical eruption. Treatment with 15% glycolic acid (AHA) lotion and heliotherapy improved this disturbing eruption.

Keywords: digitate keratosis, multiple minute digitate hyperkeratosis, dermoscopy, glycolic acid

Received: 9 September 2014 | Returned for modification: 28 October 2014 | Accepted: 17 November 2014

Introduction

Digitate keratosis is a clinical finding that can be either acquired or inherited and is present in several disorders of keratinization, including multiple minute digitate hyperkeratosis (MMDH), lichen spinulosus, phrynoderma, spiny keratoderma, arsenical keratosis, multiple filiform verrucae, postirradiation digitate keratosis, trichodysplasia spinulosa, and hyperkeratotic spicules (1). “Digitate” refers to minute fingerlike projections. Recently, Caccetta et al. (1) proposed a diagnostic algorithm for digitate keratosis. This algorithm divides digitate keratoses into generalized or localized ones. Generalized digitate keratoses are classified as follicular or non-follicular keratosis, whereas localized digitate keratoses are subdivided into palmoplantar, facial, or radiation sites.

We present a case of a generalized non-follicular digitate keratosis that is classified as MMDH according to this algorithm.

Case report

A 52-year-old Caucasian woman presented with a 6-year history of multiple asymptomatic skin-colored digitate lesions, 3 to 5 mm long and 1 to 2 mm wide, distributed on the forehead, neck, extensor surface of the arms but also in the inframammary folds, axillae and lower limbs, especially on the popliteal fold (Figs. 1a, 1b). She noticed that it worsens in the winter and improves after the summer. Dermoscopy showed thread-like hyperkeratosis (Fig. 1c). Her personal history is unremarkable except for arterial hypertension controlled with bisoprolol. She has a 67-year-old sister and a 39-year-old niece with an identical eruption.

Skin biopsy specimens were taken from the inframammary fold and abdomen. These specimens showed focal columns of orthokeratotic hyperkeratosis and slightly tented epidermis. The dermis was normal (Figs. 1d, 1e, and 1f).

Laboratory examinations, which included blood cell count, renal and liver function tests, serum and urine electrophoresis, CEA, CA 15-3, CA125 cancer antigen, vitamins A, B, and C, and chest-X-ray, were normal.

A diagnosis of MMDH was made based on the generalized dis-

tribution of the lesions, sparing of the palms and soles, histology showing a non-follicular pattern, and no nutritional deficit.

The patient was treated with 15% glycolic acid (AHA) lotion and heliotherapy with moderate improvement.

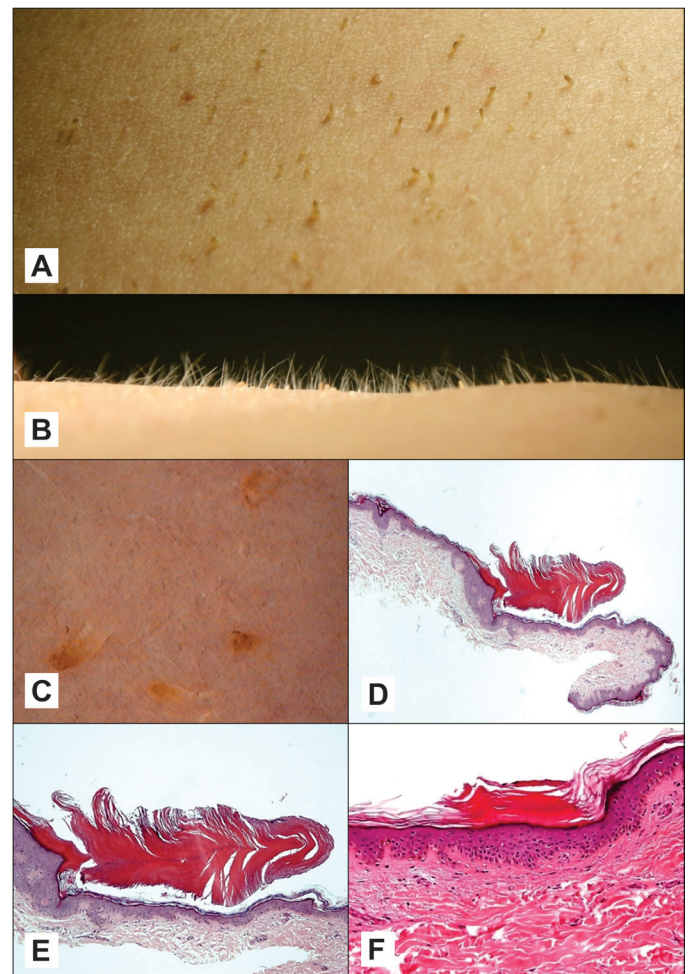


Figure 1 | a) Clinical photograph of digitate hyperkeratoses, b) Tangential view, c) Dermoscopy (30 ×, molemax), d) Scanning magnification of a hyperkeratosis, e) Median power of the same hyperkeratosis, f) Early plaque-like hyperkeratosis.

¹Epidermis Dermatology Center, CUF Institute, Porto, Portugal. ²Faculty of Medicine, University of Porto, Porto, Portugal. ³Department of Dermatology, Inselspital, University of Bern, Bern, Switzerland. ✉ Corresponding author: epidermis@epidermis.pt

Discussion

MMDH was first described by Goldstein in 1967 (2). Since then, some clinical cases have been reported in the literature (3–11). This is a predominantly non-follicular generalized digitate keratosis affecting the trunk and limbs. Usually the face and the palmoplantar surfaces are not affected.

Clinically, it is characterized by spicules (minute fingerlike keratin projections) with colors ranging from skin-colored to yellow or brown, varying in size (0.5 to 5.0 mm long and 0.3 to 2.0 mm in diameter), and sometimes presenting as flat-topped, dome-shaped, or crateriform papules (1).

This disorder can be sporadic, familial, or drug-induced (etretinate) (12). Although some authors have proposed a relationship between sporadic MMDH and malignancy and/or inflammatory disorders, it is now recognized that those disorders are distinct from MMDH (13). Despite this, recommendations are made to confirm that patients are up-to-date on their age-appropriate malignancy screening.

The age of onset varies between 15 and 81 years. There were 18 females and 10 male cases reported in the literature until the report by Caccetta et al. (1). As far as we know, our report is the first in the literature on dermoscopy findings including fingerlike keratin structures with skin color in the base and yellow to brown on the tip, varying in size and in diameter, that can help in clinical diagnosis. Histopathology reveals focal columns of orthokeratotic hyperkeratosis arising from a tented or flat epidermis. The stratum granulosum is often prominent, but may be of variable thickness. Electron microscopy may show a focally reduced number of keratohyaline granules (14–17).

Treatment includes topical keratolytics and topical and oral retinoids with transient or low success. Our patient reported moderate improvement with glycolic acid plus sun exposure. Phototherapy seems to be a reasonable treatment, but was not possible in our patient.

For further understanding of digitate keratoses, immunohistochemical cytokeratin and genetic analyses seem to be necessary in the future.

References

- Caccetta T, Dessauvagie B, McCallum D, Kumarasinghe S. Multiple minute digitate hyperkeratoses: a proposed algorithm for the digitate keratoses. *J Am Acad Dermatol.* 2012;67:e49-55.
- Goldstein N. Multiple minute digitate hyperkeratoses. *Arch Dermatol.* 1967;96:692-3.
- Yoon S, Gibbs R. Multiple minute digitate hyperkeratoses. *Arch Dermatol.* 1975;111:1176-7.
- Judd L, Wood K. Disseminated spiked hyperkeratosis. *Int J Dermatol.* 1993;32:446-7.
- Wilkinson S, Wilkinson N, Chalmers R. Multiple minute digitate keratoses: a transient, sporadic variant. *J Am Acad Dermatol.* 1994;31:802-3.
- Rubegni P, De Aloe G, Pianigiani E, Cherubini-Di Simplicio F, Fimiani M. Two sporadic cases of idiopathic multiple minute digitate hyperkeratoses. *Clin Exp Dermatol.* 2001;26:53-5.
- Pimentel C, Puig L, Garcia-Muret M, Fernandez-Figueras M, Alomar A. Multiple minute digitate hyperkeratosis. *J Eur Acad Dermatol Vener.* 2002;16:422-4.
- Satta R, Casu G, Dore F, Longinotti M, Cottoni F. Follicular spicules and multiple ulcers: cutaneous manifestation of multiple myeloma. *J Am Acad Dermatol.* 2003;49:736-40.
- Guarneri C, Guarneri F, Vaccaro M, Borgia F, Cannavo S. Multiple minute digitate hyperkeratoses. *Int J Dermatol.* 2005;44:664-7.
- Clark J, Davis G, Bennett D. Innumerable filiform papules. *Arch Dermatol.* 2008;144:1051-6.
- Ensslin CJ, Cohen J, DiCostanzo D, Silverstein D. Multiple minute digitate hyperkeratoses. *J Am Acad Dermatol.* 2013;69:e207-8.
- Carmichael A, Tan C. Digitate keratoses—a complication of etretinate used in the treatment of disseminated superficial actinic porokeratosis. *Clin Exp Dermatol.* 1990;15:370-1.
- Miller A, Aires D, Fraga G. Multiple minute digitate hyperkeratosis: A case report. *Dermatol Online J.* 2011;17:1-6.
- Frenk E, Mevorah B, Leu F. Disseminated spiked hyperkeratoses: an unusual discrete non-follicular keratinization disorder. *Arch Dermatol.* 1981;117:412-4.
- Shuttleworth D, Graham-Brown RAC, Hutchinson PE. Minute aggregate keratoses—a report of three cases. *Clin Exp Dermatol.* 1985;10:566-71.
- Nedwich JA, Sullivan JJ. Disseminated spiked hyperkeratosis. *Int J Dermatol.* 1987;26:358-61.
- Balus L, Donati P, Amantea A, Breathnach AS. Multiple minute digitate hyperkeratosis. *J Am Acad Dermatol.* 1988;18:431-6.