Multiple keratoacanthomas of Ferguson-Smith type

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April 26, 2022

Abstract

We report a case of a 41-year-old male patient with no family history, presented with extensive multiple keratoacanthomas with disfiguring scars. The diagnosis of a sporadic form of Ferguson-Smith syndrome was made. Treatment with acitretin showed a marked response. Recognizing this syndrome is crucial, early treatment helps avoid scar format

Introduction

Keratoacanthoma (KA) is a common cutaneous neoplasm, probably derived from hair follicle cells (1,2). KA is a keratin-plugged, crater-shaped nodule that arises spontaneously, grows fast, and then typically regresses. It usually presents as a solitary lesion. However, multiple lesions in a sporadic form or an inherited manner are possible (2,3). The most common form of multiple KAs is Ferguson-Smith type. We reported herein the first Tunisian case of Ferguson-Smith type keratoacanthoma that occurred in a 41-year-old male patient, with no family history of this variant.

Case Report

A 41-year-old man, with no past medical history, presented with multiple tumors on his forearms and trunk. Lesions started appearing in the second decade of his life. Tumors grow slowly and resolve within months leaving disfiguring scars. Physical examination revealed twenty-three erythematous, dome-shaped, cutaneous nodules of 0.5 to 3 cm diameter, with a central keratotic plug, covered with crusts and blood spots, and located on the trunk and limbs (figure 1). Some of the lesions were clustered leaving Blaschko-linear pitted scars. The conjunctiva, palms, soles, genital, and oral mucosa were not affected. Dermoscopic examination showed a central structureless red-purple keratotic crater surrounded by a structureless while area with white circles surrounding hair follicles and linear, serpentine, and looped vessels (figure 1). Histopathological examination of an excised tumor revealed a hyperkeratotic acanthotic epidermis with well-differentiated glassy keratinocytes and basal mitoses, surrounded by a polymorphonuclear inflammatory infiltrate (figure 2). Based on clinical and histopathological findings, the diagnosis of multiple KA of Ferguson-Smith type was made. Treatment with oral acitretin 20 mg/d (approximately 0.3 mg/kg of body weight) was started with marked and rapid response.

Discussion

Clinical forms of multiple KAs include Ferguson-Smith type, generalized eruptive Grzybowski type, centrifugum marginatum type, multiple persistent non-familial type, agglomerate type, KAs in Muir-Torre syndrome, and KAs in xeroderma pigmentosum (4).

KA of Ferguson-Smith type also known as multiple self-healing squamous epitheliomas (MSHSE) is the most common form of multiple KAs. It was first described in 1934 in Scottish families. However, sporadic cases

have been reported in various countries (2,4).

Haplotypes for polymorphic markers segregating with Ferguson-Smith syndrome in non-Scottish and Scottish families differ, suggesting that Ferguson-Smith syndrome is not caused by a founder mutation, thus considered now as a digenic/multilocus disease (5,6) caused by loss of function mutations of *Transforming growth factor, beta receptor I (TGFBR1)* gene interacting with permissive variants at a second linked locus on the long arm of chromosome 9 (7). Inheritance is autosomal dominant with incomplete penetrance. De novo mutations are possible which may explain the absence of a family history of KA in our patient.

Multiple self-healing lesions usually appear during childhood, adolescence, or early adulthood. Men and women are equally affected. Although lesions may arise on any part of the skin, KAs are mainly located on the face and extremities. The trunk is rarely affected. Palms and soles are usually spared. Each lesion starts as a reddish macule, becomes papular, and then grows rapidly into an ordinary solitary KA. The number of KAs varies from a few to hundreds (4). They evolve and then disappear rapidly within months leaving atrophic and shallower scars and new KAs that keep continuously appearing.

Retinoids are the\sout-first-line treatment option for Ferguson-Smith syndrome (2). It is associated with a good clinical response. However, it has only a suspensive action. Therefore, a long-term regimen is necessary to sustain the clinical response. In our case, treatment with a relatively low dose of acitretin was efficient. Limited lesions can be treated with intralesional methotrexate (8). Cyclophosphamide was also used with good results in retinoid- and methotrexate-resistant cases of multiple KAs (9).

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Figure Legends

Figure 1: Multiple self-healing lesions on the trunk (a) and limbs (b,c,d,e,f,g). Tumors are dome-shaped with a central keratotic plug, covered with crusts and blood spots (c). Some of the lesions were clustered leaving Blaschko-linear pitted scars (b). Dermoscopic examination showed a central structureless red-purple

keratotic crater surrounded by a structureless while area with white circles surrounding hair follicles and linear, serpentine, and looped vessels (h).

Figure 2: Histopathological examination. (a- Hematoxylin and eosin, x40) Symmetric cup-shaped proliferation squamous cells with a central keratinous crater. (b- Hematoxylin and eosin, x200) the proliferation is made of glassy squamous cells containing abundant eosinophilic and translucent cytoplasm. Mitosis and numerous dyskeratotic cells are visible. (c- Hematoxylin and eosin, x200) Lymphocytic inflammatory infiltrate surrounding deep lobules of atypical squamous cells