

Giant Verrucous Psoriatic Plaque encircled by Porokeratosis: An Enigmatic Histopathological Association

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Abstract

Porokeratosis is an inherited, clonal disorder of epidermal keratinization classically characterized by development of single or multiple annular lesions with raised, sharply marginated, keratotic ridge and central atrophy. This clinical presentation may vary with different types of porokeratosis but histopathologically unified by the consistent finding of 'cornoid lamella'. Porokeratosis may develop sporadically due to genetic predisposition or as a result of locally induced immunosuppression. In medical literature, to the best of our knowledge, there are very few reported cases in which lesions of psoriasis were also having cornoid lamella at the margin of the psoriatic lesion and it has recently been described as "psoriasis encircled by porokeratosis." Here we document a rare case of giant verrucous psoriatic plaque with porokeratosis at the margin in a 25 years old male who was not immunosuppressed and has not received any immunosuppressive treatment such as steroids or photochemotherapy.

Keywords: Giant verrucous; Porokeratosis; Psoriasis

Introduction

Porokeratosis is a genetically determined cornification disorders, clinically presented by annular lesions with sharply marginated, keratotic edge and central atrophy and histopathologically unified by the consistent finding of 'cornoid lamella' [1]. On very rare occasions, it may develop due to local immunosuppression owing to some drugs or diseases. Herein we are documenting a unique case demonstrating cornoid lamella at the margin of the psoriatic in a 25 year old male.

Case Report

A 25 year old male came to the outpatient door of our department of dermatology presenting with multiple verrucous plaque-type psoriatic lesions over right side of back, left lateral aspect of chest and abdomen, nape of the neck, right arm and abdomen. The lesions were mildly pruritic and very scaly. On local cutaneous examination, there were total five such lesions which were seen as well-defined, whitish, scaly, verrucous plaque without any raised margin.



Figure 1: Giant, scaly, verrucous plaque involving: (A) right half of back and (B) left lateral aspect of chest and abdomen extending to right scapular area.

No other sites were affected including scalp, mucosa and nails. There was no family history of psoriasis or porokeratosis and patient had not received any allopathic treatment before for this condition. His general physical, systemic examination and routine laboratory parameters was also unremarkable. Two of such lesions were giant in size involving whole right half of back and left lateral aspect of trunk and one were over the nape of neck (Figures 1 and 2).



Figure 2: Similar verrucous plaque over the nape of neck.

For histopathological evaluation (HPE), two samples of punch biopsy were collected, one from the edge and other from the middle of the plaque.

The sample taken from the edge clearly demonstrated cornoid lamella as vertical column of parakeratotic cells with pyknotic nuclei running through the well stained surrounding cells along with the absence of granular layer in its floor, hypergranulosis of wall and dyskeratotic keratinocytes in the spinous layer. Perivascular patchy lichenoid lymphocytic infiltrates in papillary dermis was also noted. All these findings were typical of porokeratosis (Figures 3A and 3B).

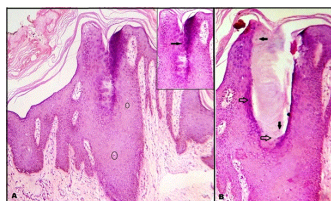


Figure 3: (A) Cornoid lamella (solid black arrow) with dyskeratotic keratinocytes in the spinous layer (circle), (B) Another cornoid lamella depicting column of parakeratotic cells with pyknotic nuclei (solid black arrow), hypergranulosis of wall and absence of granular layer in floor (H&E, x20).

Other sample taken from the center of the lesion revealed characteristic psoriasiform epidermal changes such as orthohyperkeratosis with foci of parakeratosis, attenuated granular layer and acanthosis with moderate papillomatosis (Figure 4).

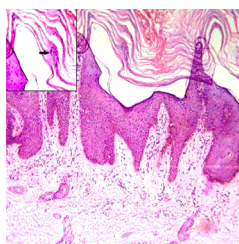


Figure 4: psoriasiform epidermal changes such as orthohyperkeratosis with foci of parakeratosis (solid black arrow), attenuated granular layer and acanthosis with regularly elongated rete ridges (H&E, x40).

Typical psoriatic dermal changes were dilated tortuous capillaries at the tip of clubbed dermal papilla, moderately dense superficial perivascular lymphocytic infiltrate (Figure 5).

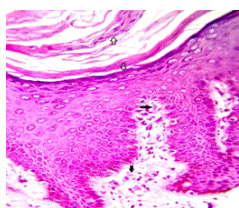


Figure 5: Dilated tortuous capillaries (solid black arrow) and perivascular lymphocytic infiltrate in papillary dermis (H&E, x40).

The presence of such classical histopathological features of both the diseases within same verrucous plaque led us to diagnose it as a distinct entity “giant verrucous psoriatic plaque encircled by porokeratosis”. The patient was kept on oral isotretinoin and topical salicylic acid but he did not turn up further.

Discussion

The association of psoriasis and porokeratosis is long known but definitely rare and their pathogenetic evolution is still an enigma. Recently in a study, similar pattern of upregulation of certain proteins such as keratins (keratins 16, 6A, 6B and 17), specific calcium-binding proteins (psoriasin 1, calgranulin A, calgranulin B and calgizarin), and gap junction proteins (connexin 26 and 30) were noted in psoriasis and porokeratosis which favors a genetic relationship between these two dermatoses [2].

In 2006, a classification was proposed to categorize this association into three groups [3]. The first group includes cases of porokeratosis that mimic psoriasis, where verrucous porokeratotic plaques are usually localized to the natal cleft known as ‘porokeratosis ptychotropica’ [4].

The second group includes patients presenting with classical clinical lesions of porokeratosis along with psoriasiform changes at the center of the porokeratotic plaque. The third group consists of patients with psoriasis and disseminated superficial actinic porokeratosis (DSAP) induced by therapeutic phototherapy or photochemotherapy [5]. This classification also has therapeutic and prognostic implications as treatment approach of these two conditions differ and unfortunately on rare occasions, porokeratosis may turn into cutaneous malignancy [6]. Our case could not be included under any of these three groups because it did not involve any folds or clefts, was not DSAP and clinical appearance was not in favour of either of the two condition.

Moreover, to our knowledge, in all such previously reported cases with combined features of porokeratosis and psoriasis, the porokeratotic lesions have developed from local immunosuppression induced by prolonged application of topical corticosteroids, photochemotherapy, immunosuppressive drugs or malignancy unlike in our case as there was no known inducing factors [7].

Thus, this is a unique case having typical histopathological findings of psoriasis at the center and porokeratosis at the margin of verrucous psoriatic plaque in a patient without any history of any form of immunosuppressive treatments in the past hence it could be a distinct entity named as “giant verrucous psoriatic plaque encircled by porokeratosis” which can be treated with topical 5% imiquimod, vitamin D analogues, oral retinoic acid derivatives or can be Pathogenically excised if feasible [8].

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