

Verrucous porokeratosis: A case report

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Porokeratoses are uncommon hereditary or acquired keratinization disorders due to abnormal clones of keratinocytes in the epidermis. Porokeratoses have several clinical features which may occur simultaneously. A rare type is verrucous porokeratosis (VPK). Herein, we present a 47-year-old man with a 4-year history of perianal verrucous lesions and one year history of annular pruritic lesions on his extremities. Tissue biopsies from the annular and verrucous lesions showed cornoid lamellation in the horny layer with epidermal invagination and lichenoid reaction in the dermis that favored porokeratosis (PK). Genotyping for human papilloma virus (HPV) on the paraffin block of the verrucous lesion was negative. Shave excision was performed with moderate improvement. Annular and VPK lesions might coexist in an individual patient and we should consider VPK in the differential diagnoses of perianal warty lesions.

Keywords: verrucous porokeratosis, cornoid lamella, annular porokeratosis

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INTRODUCTION

Porokeratosis (PK) is an uncommon hereditary or acquired keratinization disorder due to clonal disease of epidermal keratinocytes. Acquired types could be associated with immunodeficiency, trauma, infection, chemical agents, and ultraviolet radiation ^{1,2}. Histopathologically, porokeratosis is characterized by cornoid lamellation. It has been defined as a stack column of parakeratosis over depressed epidermis with diminished granular layer and dyskeratosis ³. PK has several clinical features. Porokeratosis mibelli (PKM) in men and disseminated superficial actinic porokeratosis (DSAP) in women are the most common types ¹. PKM usually presents with unilateral annular or scalloped lesions, and DSAP manifests as bilateral polycyclic plaques. A rare type of PK is verrucous porokeratosis (VPK) which also has been named as

porokeratoma in unilesional state and porokeratosis ptychotropica (PP) in flexural involvement ^{1,4,5}.

CASE REPORT

A 47-year-old man with a 4-year history of non-pruritic perianal warty lesions referred to our outpatient clinic. Initially the lesions were noticed during hemorrhoidectomy by the surgeon. He was a construction worker for many years. In physical examination there were multiple verrucous and annular lesions on the perianal, scrotal and acral regions (Figure 1A-D). He mentioned that the acral lesions appeared one year ago, which were pruritic and worsened by scratching and sweating. There was no mucosal or nail involvement. In past medical history, he had hyperlipidemia, ischemic heart disease and diabetes. In drug history, he was taking atorvastatin and metformin. There was no



Figure 1. A) Multiple verrucous (arrow B) and annular lesions (Arrow A) present in the perianal region. After skin biopsy, the annular lesion gradually changed to the verrucous type (Arrow C). B, C, D) Similar lesions were seen on the acral regions.

immunosuppressive agent. Family history was non-remarkable.

Skin biopsies were made from annular and verrucous lesions on the perianal area and also an annular lesion on the anterior right shin with differential diagnoses of hypertrophic lichen planus, warts, perforating disorders, and squamous cell carcinoma. Histopathologic findings were as follows. In the annular lesions there was mild hyperkeratosis, mild acanthosis, focal parakeratosis overlying the invaginated epidermis associated with focal hypogranulosis (cornoid lamella), and a band-like lymphohistiocytic infiltration in the

upper dermis (Figure 2A,B).

In the verrucous lesion, there was marked hyperkeratosis with a linear column of parakeratosis, papillomatosis, elongated rete ridges, focal hypergranulosis, focal hypogranulosis beneath the parakeratotic column with suspicious koilocytic changes, and chronic dermal inflammation (Figure 3A-D). Genotyping for human papilloma virus (HPV) was made by DNA analysis of the paraffin block of the verrucous lesion. The sample was tested for the following genotypes: 16, 18, 31, 33, 39, 45, 51, 52, 56, 58, 59, 68, 26, 53, 66, 70, 73, 32, 6, 11, 40, 42, 43, 44, 54, 61, 62, 67, 81, 83, and

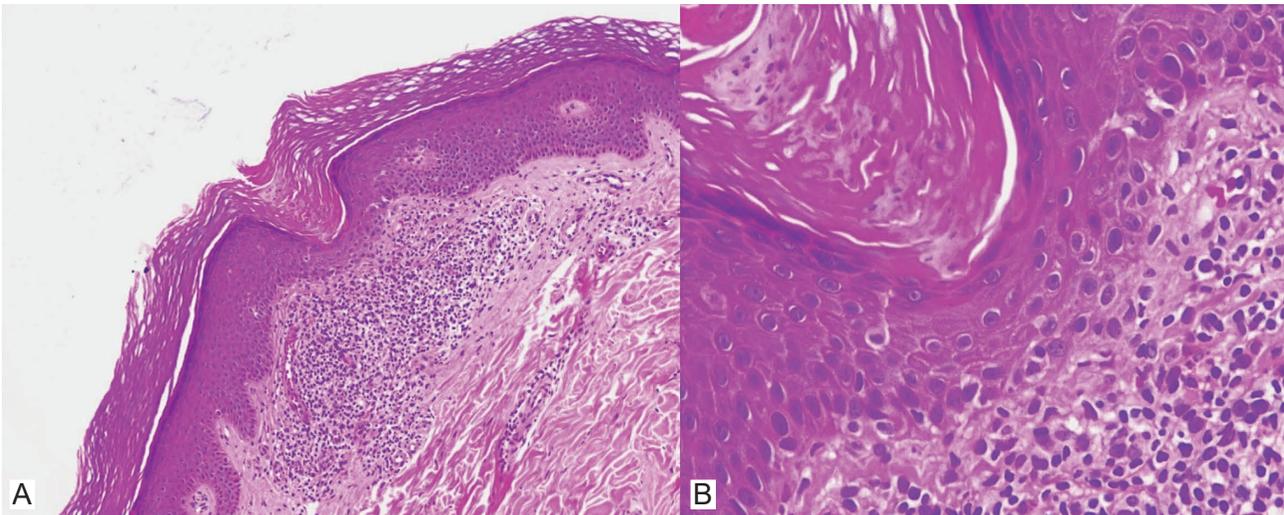


Figure 2. A, B) Mild hyperkeratosis and acanthosis with focal parakeratosis overlying a depressed epidermis associated with focal hypogranulosis (cornoid lamella) and a band-like lymphohistiocytic infiltration in the upper dermis of the annular lesion. (H&E) 40× (2A), 400× (2B).

89. However, HPV DNA was not detected. Thus, VPK was proposed.

Significant biochemical laboratory data were as follows: fasting blood sugar: 231 mg/dl, triglycerides: 212 mg/dl, total cholesterol: 157 mg/dl, alanine transaminase (ALT): 70 U/L, and aspartate transaminase (AST): 110 U/L. Evaluations for hepatitis B, C and human immunodeficiency virus markers were negative. Abdominal ultrasound was performed due to his abnormal liver function tests. The results showed a grade 2 fatty liver. Despite these findings, our patient preferred to receive oral therapy. He was prescribed Neotigason capsules (25 mg/day) and after two weeks, we reevaluated his laboratory data. The laboratory data indicated triglycerides: 637 mg/dl, total cholesterol: 225 mg/dl, ALT: 97 U/L, and AST: 134 U/L. Because of the abnormal liver function test and hyperlipidemia, oral retinoid therapy was stopped and ablative treatments (shave excision and cautery) were performed. Unfortunately, two months later the lesions recurred and the annular lesions had changed to VPK.

DISCUSSION

We report a rare type of PK variant in a 47-year-old man, which was defined as VPK. Hyperkeratotic lesions in PK have been reported under different entities in the literature and include perianal inflammatory VPK, verrucous variant of PKM, PP in case of flexural involvement, and

porokeratoma (porokeratotic acanthoma) in case of a single verrucous lesion, especially on the limbs or buttock^{1,4-7}. VPK or PP has mostly been detected in the genitogluteal region^{3,7}. All of these entities describe wart-like lesions with histopathologic findings of porokeratosis. The role of HPV in the pathogenesis of PK is questionable. HPV type 16 in a case of acral porokeratoma⁵ and HPV types 14 and 66 in PK lesions of 2 organ transplant patients have been reported¹. Negative findings in genotyping the HPV DNA in our case ruled out an association between HPV and VPK or might be explained by non-typeable HPV in our laboratory technique or a probable false negative result in formalin fixed tissue.

In contrast with PK, immunosuppression and genetic factors do not have any role in VPK^{1,5}. Trauma could be an inducing factor for PK; however, in our case it might be an exacerbating factor because 2 annular lesions after the skin biopsy transformed into verrucous lesions.

Chemical agents such as chronic exposure to benzene have been incriminated in genitocrural PK, which has been reported as pruritic keratotic skin lesions in a rubber industry worker⁸. Our case was a construction worker who had chronic contact with different chemical agents that could be an inducer for these lesions. Multiple therapeutic methods have been proposed for VPK without any good response and were associated with a high recurrence rate^{9,10}. These modalities included oral

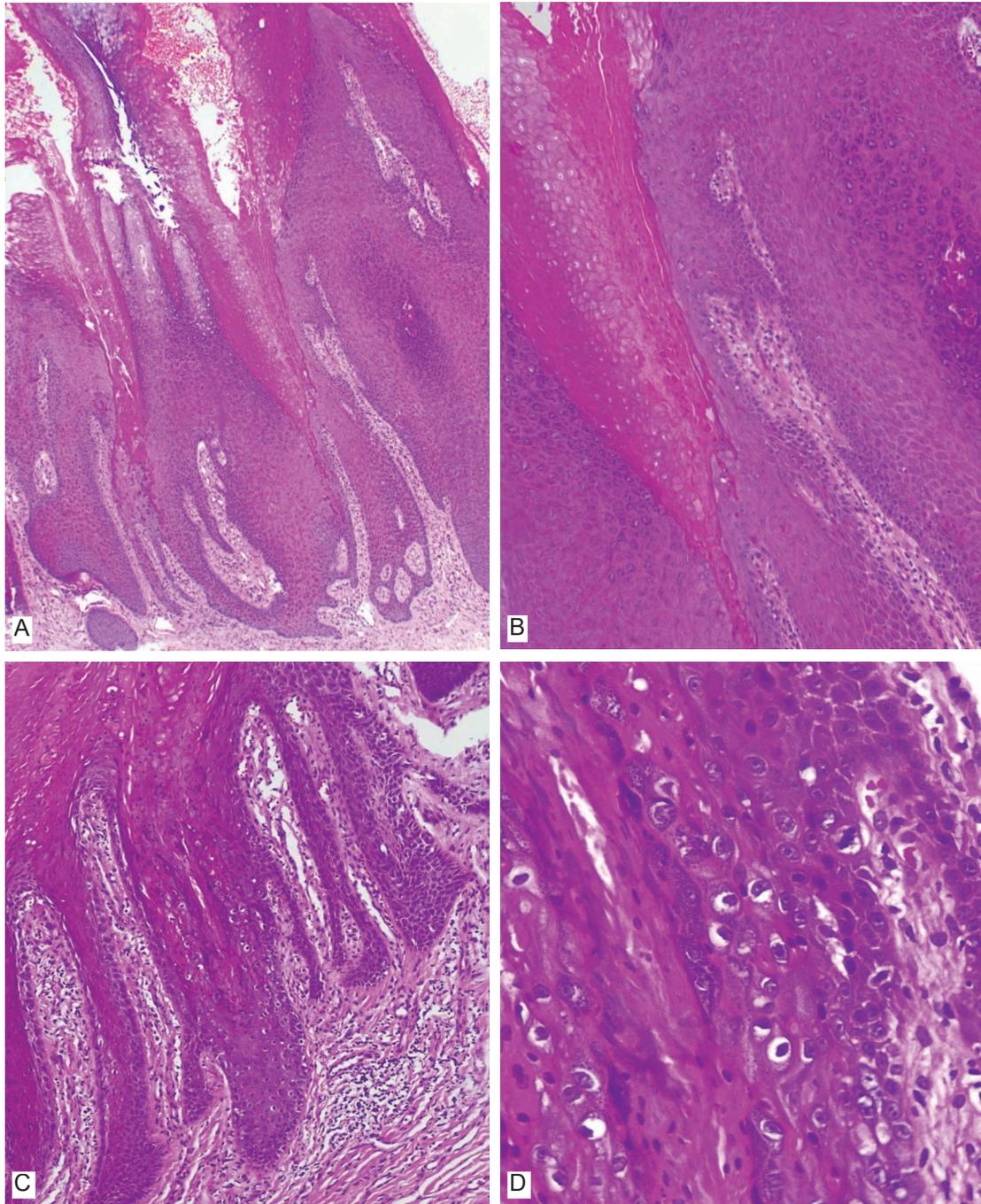


Figure 3. A) Marked hyperkeratosis with a linear column of parakeratosis, papillomatosis, elongated rete ridges and focal hypergranulosis. B) Focal hypogranulosis beneath the parakeratotic column (cornoid lamella). C, D) Koilocyte-like cells underlying the linear parakeratotic column (H&E, 40× (3A), 100× (3B), 40× (3C), 400× (3D)).

retinoid therapy, carbon dioxide laser, fluorouracil, cryotherapy, dermabrasion, and pulsed dye laser^{4,9,10}. Some types of PK such as PKM, DSAP and linear PK could progress to non-melanoma skin cancers. Malignant transformations in the VPK lesions have not yet been reported, but because of the association with PK lesions, close follow up

and excision are mandatory^{10,11}.

We report this rare type of PK because it could imitate genital warts, hypertrophic lichen planus, lichen simplex chronicus, perforating disorders, squamous cell carcinoma, and deep mycosis. In conclusion, we should consider VPK as a differential diagnosis in any patient with perianal warty lesions.

Conflict of Interest: None declared.

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