

Case Report

Disseminated verruca vulgaris in an immunocompetent individual: an exception to the rule

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ABSTRACT

Verruca or viral warts affect nearly 10% of the global population and are caused by human papillomavirus (HPV) infection, with more than 200 subtypes recognized to date. These lesions commonly involve the skin and mucous membranes and are transmitted through direct or indirect contact. Verruca plana, also known as flat warts, are typically smooth, flat-topped, reddish-brown or skin-coloured papules that often appear on the face, neck, and dorsal aspects of the hands. They are more frequent in children and young adults. While in most cases, verruca plana are self-limiting, disseminated or extensive presentations are uncommon and may indicate an underlying immune defect. Such widespread involvement warrants evaluation for immunosuppression due to conditions such as HIV infection, prolonged corticosteroid therapy, or other immunodeficiency disorders. Here, we present a case of disseminated verruca plana and outline the systematic clinical and laboratory approach undertaken to rule out any underlying immunocompromised state.

Keywords: Verruca, Human papillomavirus, Verruca plana

INTRODUCTION

Verruca vulgaris also called the common wart is caused by a notorious, human papilloma virus.¹ Predominantly found on areas such as face, hands and distal forearms, most frequently affecting women than men. They are caused by HPV subtypes 3,10,28,41.¹ Disseminated infection also known as generalized verrucosis is marked by the presence of greater than 20 lesions distributed in a confined area or extending to more than a localized site, and can show hundreds to thousand lesions.²

As the virus is epidermotrophic it produces a wide spectrum of manifestations ranging from common warts of skin and mucosa to pre-malignant conditions and malignancies of larynx, and anogenital tract. More than

200 HPV subtypes are now recognized, and are divided into alpha to Mu genera based on L1 nucleotide sequences of its genome which codes for major capsid protein. However, classifications of interest to the clinicians are based on the location of lesions on the body, oncogenic potential, and morphology of lesions.

Disseminated verruca vulgaris is a rare dermatological condition typically seen in immunocompromised individuals. We present an unusual case of a 25-year-old immunocompetent female who developed widespread verrucous lesions involving the face, trunk, and extremities over five years. The patient had no history of systemic illness or immunosuppression. Only one similar case has been previously reported in literature, making this an exceedingly rare presentation.

CASE REPORT

A 25-year-old female presented to outpatient department of Dermatology with complaints of multiple flat to raised, dark-colored lesions which were first noticed by the patient 4-5 years ago over neck and were about the size of pinhead which gradually increased in size and progressed to involve other parts of the body such as face, back, abdomen and forearms over a span of 6 months. The lesions were apparently asymptomatic except for mild pruritus. There was no evidence of an immunocompromised state due to infections, immunodeficiency syndromes or treatment modalities causing such state. The patient denied any history of surgery or organ transplant, family history of similar lesions or history of vaccination prior to the onset of the lesions.



Figure 1: Flat, slightly elevated skin colored - brown papules ranging from 0.5–2 cm present over the; (A) lateral aspect of neck and face; (B) back and (C) abdomen.



Figure 2: Flat topped papules of tan- brown colour of varied sizes from 1 cm - 3 cm; some with a hyperkeratotic, verrucous surface present over the medial aspect of bilateral forearms.

On cutaneous examination multiple flat to slightly raised flat topped papules with smooth surface, tan – brown in colour ranging from 0.5-2 cm present over face, neck, trunk, abdomen and flexural aspect of bilateral arms were noted. The lesions on forearm were flat and larger some with a hyperkeratotic, verrucous surface. Oral mucosa and genital mucosa remained unaffected and no lesions were present over scalp, palmoplantar surfaces, digits and genitalia. (Figure 1 and 2).

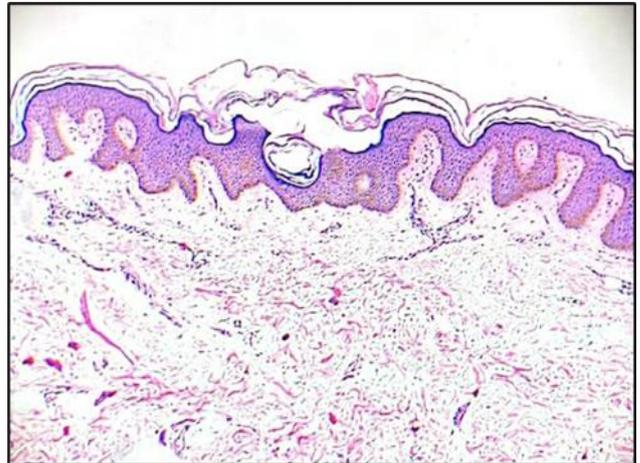


Figure 3: H and E stain 10x: hyperkeratosis with acanthosis and slight elongation of rete-ridges. Dermis is normal.

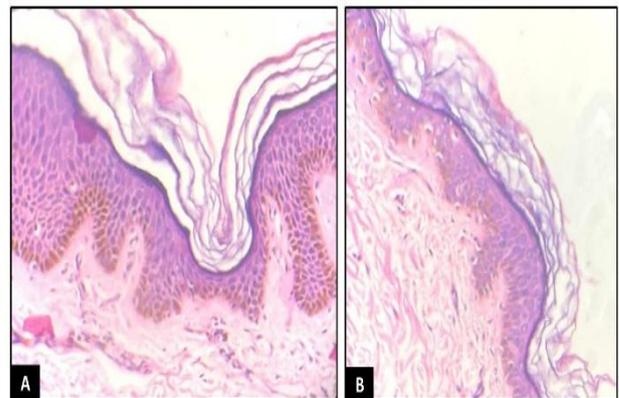


Figure 4: H and E stain 10x: (A) BASKET weave appearance of corneum; (B) Vacuolization of cells in granular layer.

Based on above features, differential diagnosis of disseminated verruca plana and epidermodysplasia verruciform was made and punch biopsy was performed. On histopathological study, epidermis showed hyperkeratosis, acanthosis, focal elongation of rete ridges, focal areas showing vacuolated cells in the granular layer and basket weave keratosis and the features were consistent with verruca plana. (Figure 3 and 4) HPV testing was planned for, which could not be performed due to unwillingness of the patient.

DISCUSSION

Mucocutaneous lesions of HPV are mostly caused by viruses belonging to the alpha genus. Benign cutaneous warts can be classified as common warts, plane warts, palmoplantar warts, filiform warts, mosaic warts, periungual/subungual warts, and anogenital warts. Mucosal lesions range from condyloma accuminata, heck’s disease to pre-malignant conditions such as Bowenoid papulosis, erythroplasia of queyrat and Buschke Lowenstein tumour. Malignant conditions of skin and mucosa can vary from cervical intraepithelial dysplasia to squamous cell carcinoma of cervix, penis, anogenital tract and laryngeal papillomas.²

Verruca plana/plane warts caused by HPV 3 are less hyperkeratotic, when compared to those caused by HPV 10, and HPV 28.³ A peculiar phenomenon observed with verruca plana is spontaneous regression, following oedema and erythema. Masatkar et al in their clinic-epidemiological study on verruca plana explained the role of koebnerisation in the spread of flat warts in more than half of the study population.⁴ Disseminated verrucosis closely resembles Epidermodysplasia verruciformis (EDV) symptomatically while the two can be differentiated majorly on histopathological basis, morphologically EDV is characterized by plane wart like hypopigmented or hyperpigmented lesions coalescing to form plaques, which are referred to as pityriasis versicolor like lesions. In addition, familial susceptibility, as an X-linked recessive trait can be traced out in most cases.⁵ Shimano et al identified HPV 78 in plane warts majorly in immunosuppressed individuals and only in 2 immunocompetent patients, including healthy skin and

lesional skin. They postulated that the pathogenicity of HPV 78 is dependent on the immune status of the host.⁶ In a study conducted by Cheng et al, HPV testing profiles yield different subtypes for both the conditions, with beta – HPV strains more often isolated with EDV, especially HPV-5.⁷ In another similar report of generalized verrucosis in an immunocompetent patient by Yenagi et al HPV 3, HPV50, HPV57, HPV76 were isolated, where HPV 76 belonging to beta genus was specific for EDV.⁵ Histopathology remains central to the diagnosis with EDV showing features of seborrheic keratosis such as acanthosis and nests of basaloid cells with large keratinocytes and verruca with large vacuolar keratinocytes in stratum granulosum and spinosum, along with papillomatosis and hyperkeratosis. However, verruca plana does not show papillomatosis and there is only slight elongation of rete ridges.

In a similar report of disseminated verruca plana in an immunocompetent adult male by Pavithra et al, the peculiar feature is the occurrence in male gender and a photo-sparing distribution. This presentation is in contrast to our case where the lesions are relatively concentrated in the photo-exposed areas.⁸

In an elaborate review of disseminated verruca by Sri et al, which cited possible associations of this presentation based on the age, patient’s history and other clinical features, recommended investigations to diagnose the associated underlying disorders.⁴ In our case, comprehensive evaluation of the patient’s symptoms, history and clinical examination findings, certain underlying disorders were ruled out narrowing the investigative workup of the patient, (Figure 5).⁹

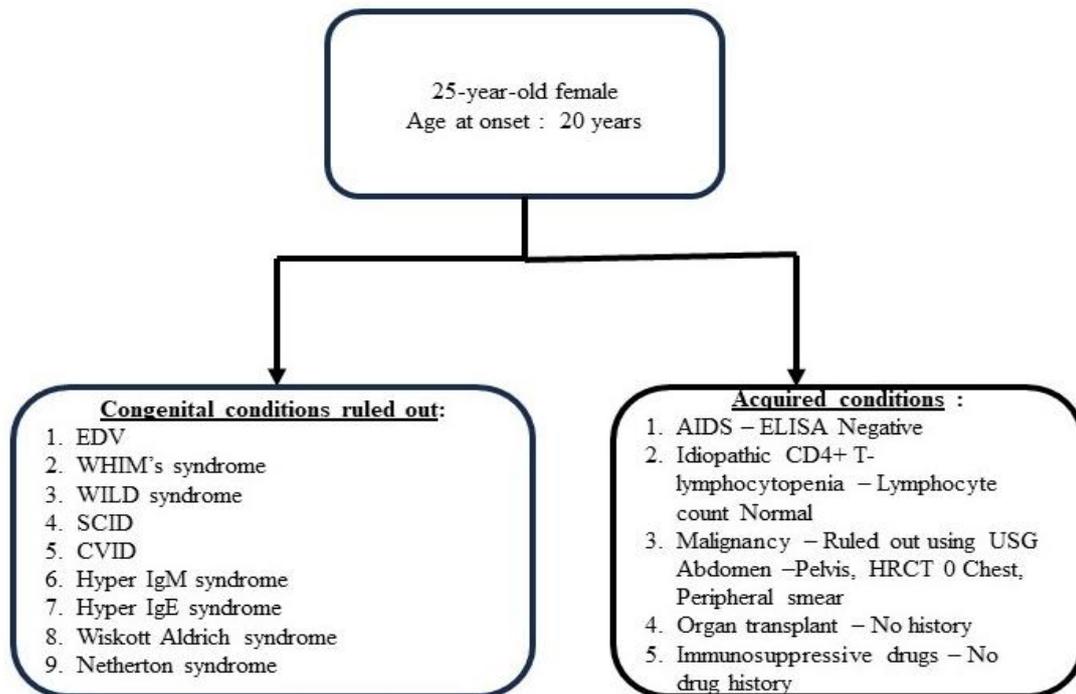


Figure 5: Investigative work up of the patient.

Various treatment modalities include physical modalities such as surgical removal, cryotherapy, chemical cauterisation and lasers which remains the first line treatments of choice. Photodynamic therapy has been used as a standalone modality or in conjunction with other physical modalities.¹⁰ Among the topical treatments tretinoic acid, imiquimod, 5-fluorouracil and salicylic acid were proven to be efficacious.¹⁰ Topical calcipotriol therapy has been attempted with satisfactory results including combination regimens.^{11,12} Fractional CO₂ laser, long pulsed Nd: Yag laser and fractional lasers have all substantiated effectiveness.¹³⁻¹⁵ Cauterisation with trichloroacetic acid is also an efficacious treatment.¹⁶ 40% potassium hydroxide has also been tried. Resolution of plane warts after HPV vaccination is also frequently reported. Immunotherapy in the form of intralesional candida antigen, measles mumps rubella vaccine and purified protein derivative of tuberculosis have been compared in the treatment of flat warts, where candida antigen has demonstrated highest efficacy.¹⁶

CONCLUSION

Disseminated verruca vulgaris, although commonly encountered in immunosuppressed states, is relatively less reported in immunocompetent patients. When such presentation is encountered, an in-depth evaluation of symptoms to rule out underlying associated diseases should be performed.

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