EPIDERMODYSPLASIA VERRUCIFORMIS

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ABSTRACT

An 18-year-old female presented with whitish lesions with itching over face, neck, trunk, and limbs since 17 yrs. not responding to any ayurvedic or allopathic treatment in the form of topical steroids. Skin examination showed multiple well-defined hypopigmented scaly plaques resembling flat warts over face, neck while on trunk, and limbs resembling Pityriasis versicolour-like lesion. Skin biopsy showed histological features like hyperkeratosis and acanthosis with koilocytes in the upper layer of epidermis consistent with epidermodysplasia verruciformis [Verruca plana]. Mantoux test was negative after 48 hrs. Radiological findings showed no abnormality in chest x-ray. On the basis of clinical findings and investigations, diagnosis of epidermodysplasia verruciformis was made and Tab isotretinoin 10 mg HS, Zinc capsules, BCG vaccine were started and patient showed considerable improvement.

KEYWORDS

Epidermodysplasia Verruciformis.

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INTRODUCTION

Epidermodysplasia Verruciformis (EV) is an autosomal recessive disorder characterised by disseminated dyschromic macules resembling Pityriasis versicolour and flat warts predominant on sun-exposed areas.¹ Most cases are caused by mutations in 2 genes, EVER1 and EVER2 located on chromosome 17q25 resulting in a susceptibility to EV-associated HPV types. EVER genes encode transmembrane proteins located in the endoplasmic reticulum and are involved in signal transduction.² It has been demonstrated that EVER proteins regulate zinc homeostasis by interacting with zinc transporter proteins. This interaction is inhibited by the E5 protein of HPV. It has been suggested that loss-of-function mutations in the EVER genes result in specific susceptibility to these viruses.³

The oncogenic HPV-5 and HPV-8 are the most frequent HPV types, identified in 90% of patients with EV. Other known HPV include HPV-9, 12, 14, 15, 17, 19 through 25, 28, 29, 36, and 47.

Skin eruption usually begins during childhood and progressively spreads. The lesions remain chronic and refractory. Cutaneous non-melanoma skin cancers like Bowen's disease and invasive squamous cell carcinoma develop in 30% to 50% of the patients.

Case Report

A 18-year-old female presented with white coloured skin lesions with itching over face, neck, trunk, and limbs since 17 years not responding to any ayurvedic or allopathic treatment in the form of topical antifungals, steroids, or emollients.

On physical examination, the patient was afebrile and was haemodynamically stable.

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Skin examination showed multiple, well-defined, hypopigmented macules of varying sizes with fine scaling over bilateral extremities, trunk, and back.

Also multiple, skin coloured to hyperpigmented, hyperkeratotic papules were present over lateral aspect of neck, dorsum of bilateral hands, and bilateral feet. Ichthyosis was present over bilateral legs. Few cherry angiomas were present over trunk and abdomen. SCALP showed multiple, well-defined, hyperkeratotic papules. NAIL dystrophy was present. Genital and oral examination showed no abnormality.

Figure showing Hyperkeratotic Papules over Neck

Figure showing Hypopigmented Macules As Well As Hyperkeratotic Papules over Trunk

Figure showing Hyperkeratotic Papules over Dorsum of Hand

Figure showing Keratotic Papules over Scalp

Figure showing Verruca Plana like Lesions over Dorsum of Feet.

Figure showing Hypo-pigmented Macules and few Keratotic Papules over Thigh.

Figure showing Few Keratotic Papules over Hand

Investigations

Blood

Hb	10.4
TLC	5400
DLC	70/27/2/1
Platelet Count	3.22
Total Bilirubin	0.5
Direct Bilirubin	0.3
Indirect Bilirubin	0.2
SGOT	16.4
SGPT	27.3
ALP	192
Total Proteins	7.5
Albumin	4.5
Globulin	3.0

Skin biopsy showed hyperkeratotic and slightly acanthotic epidermis. Vacuolated cells were present in the upper stratum Malpighi and granular layer. Affected keratinocytes had abundant, slightly basophilic cytoplasm. Some nuclei appeared pyknotic and others appeared large, round, and empty.

Histopathology of Epidermodysplasia Verruciformis showing Hyperkeratotic and Slightly Acanthotic Epidermis

On the basis of clinical findings and investigations, diagnosis of Epidermodysplasia verruciformis was made.

Patient was treated with the following plan and she showed considerable improvement.

1. Tablet isotretinoin 10 mg once a day.
2. Capsule zinc once a day.
3. Oral antihistamines.
4. Topical emollients and sunscreen.
5. Topical retinoids in the form of adapalene and tretinoin.
6. Intralesional immunotherapy in form of tuberculin PPD.

DISCUSSION

Epidermodysplasia verruciformis is a viral infection caused by human papilloma virus in genetically susceptible individuals. It is characterised by the appearance of generalised wart-like lesions early in life and histological examination of the lesions and detection of HPV DNA in the lesions. The infection manifests with the appearance of benign, planar, wart-like papules, and tinea versicolour-like macules.

There is generally inherited susceptibility to this virus, but there was no such family history in this patient. Usually, pattern of inheritance is autosomal recessive although autosomal dominant and X-linked dominant patterns have also been reported.

Malignant conversion in EV may occur over 20 to 30 years. However, nowadays, malignant conversion is seen over shorter periods of time possibly due to the increase of time to sun exposure, altitude, or outdoor occupations.⁴ The lesions appear mainly on sun-exposed areas frequently on the forehead.

No effective treatment has been found for such patients. Strict sun avoidance and protection has been advised to such patients as carcinomatous changes have been reported on sun exposure. Limited success has been claimed with systemic retinoids-like ETRETINATE considering that it may prevent dysplastic or malignant changes. Topical retinoids have been tried over wart-like lesions considering that they help in differentiation and desquamation of verrucous lesions. Considering the extent of lesions, oral retinoids are given preferably.

Topical 5-fluorouracil, imiquimod have been tried. Oral cimetidine, which is now outdated and systemic interferons may also be used in management of these patients with variable results.

Tuberculin Purified Protein Derivative (PPD) is an extract of mycobacterium tuberculosis. The component of organism is contained in extracts of culture filtrates and in the core elements of classic tuberculin PPD. Reaction in the skin to tuberculin PPD begins when specialised immune cells called T cells are sensitised. This therapy has been tried in viral warts⁵ caused by HPV virus successfully and therefore was tried in EDV lesions, which are considered due to HPV 5 and 8 and showed variable results in two different patients.

Differential diagnosis for trunk lesions was kept as tinea versicolour and for lesions on dorsum of hands as acrokeratosis verruciformis, but since as both were present since childhood and on histological findings diagnosis of epidermodysplasia verruciformis was made. Patient showed considerable improvement with the above-mentioned treatment.

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