

EPIDERMODYSPLASIA VERRUCIFORMIS: A CASE REPORT

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Summary

Epidermodysplasia verruciformis is a rare autosomal recessive disorder of skin characterized by widespread Human Papilloma Virus infection and multiple cutaneous squamous cell carcinomas. A 32 years old man reported to Department of Dermatology and Venereology, Chittagong Medical College Hospital, Chittagong, Bangladesh with a cauliflower like growth on his right temple and multiple flat warts/ seborrheic keratoses like lesions, scaly, hypopigmented macules, patches like pityriasis versicolor and multiple plaques on his trunk, upper extremities, forehead and scalp. The patient has been suffering from numerous warty plaque type lesions in different parts of the body from his childhood. Biopsy specimen taken from the cauliflower like growth of scalp for histopathology showed squamous cell carcinoma. Another biopsy specimen taken from warty lesion of left upper arm for histopathology showed features of verruca plana. Clinically and histopathologically the patient was diagnosed as Epidermodysplasia Verruciformis. Excision of the cauliflower like growth was done followed by skin grafting. He was advised to avoid sun exposure.

Key words

Papilloma Virus; cauliflower like growth; skin grafting

Introduction

Epidermodysplasia verruciformis is a rare inherited disorder characterized by widespread HPV and cutaneous squamous cell carcinoma¹.

The susceptibility to the HPV viruses inherited usually through an autosomal recessive gene, though an autosomal dominant² and probable x-linked dominant patterns³ have been reported. Pathogenesis of this syndrome is unknown, but is supposed to be a specific defect of cell mediated immunity.

Patients develop cutaneous lesions in early childhood and an appreciable proportion of these patients progress to develop non-melanoma skin cancers as early as the 3rd decade of life. Epidermodysplasia verruciformis is associated with nonsense mutations in two adjacent genes, EVER 1 and EVER 2, which are located on chromosome 17q 25⁴.

The genetic mutations render individuals susceptible to infection with HPV 5,8,9,12, 14,15,17, 19-25, 36-38,47 and 49. These HPV types, which are referred to as EV-HPV types, are ubiquitous and harmless to healthy, unaffected individuals^{5,6}. Individuals with EV are not at increased risk for bacterial, fungal or other viral infections nor are they abnormally susceptible to genital HPV genotypes⁴. Cutaneous lesions in EV are highly polymorphic. Patients often first develop persistent verruca plana like lesions over time, they may also develop pityriasis versicolor like macules, brown scaly papules and plaques. Seborrheic keratosis like lesions and non melanoma skin cancers⁷. Lesions are observed predominantly in sun-exposed areas, especially the scalp, forehead, neck and dorsum of the hands. Non melanoma skin cancers, primarily squamous cell carcinomas have been reported to occur in greater than 50% of patients with EV⁸. While some authors report a rather indolent course for these tumours, others have documented extremely aggressive and metastatic carcinomas, which included cases that resulted in death^{8,9}. Immunocompromised individuals, such as those with HIV infection may have multiple warts that contain EV types and are difficult to eradicate, but this susceptibility is acquired. Squamous cell carcinoma in EV and immunosuppression usually arise in pityriasis versicolor like lesions on sun-exposed areas. Although pityriasis versicolor like lesions caused by any EV type may be at increased risk of becoming malignant, this is high for those caused by HPV 5 & 8¹⁰. Among oncogenic EV-HPV types, HPV5 and HPV 8 have been isolated in upwards of 90% of EV associated squamous cell carcinomas¹¹.

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Ultraviolet radiation exposure appears to be a necessary co carcinogen in the pathogenesis of EV associated malignant conditions. Ultraviolet radiation may directly activate certain oncogenic HPV genotypes and /or activate viral replication indirectly by inducing local or systemic immuno suppression^{12,13}. A dysfunction in the p 53 gene also appears to play a role in EV carcinogenesis¹⁴. Sun avoidance and sun protection are of paramount importance for EV patients.

Morbidity and mortality may be avoided by early recognition of the disease, sun avoidance and treatment of premalignant and malignant lesions. Surgical excision is the appropriate treatment for invasive carcinomas; however adjunctive methods may be employed to treat premalignant lesions and thus minimize the number of surgeries needed. Acitretin 0.5-1mg/day orally has been effective and is perhaps the drug of choice currently¹⁷. Case reports have claimed effective treatment of EV with the combination of acitretin and interferon alfa-2a and also with topical 5-aminolevulinic acid and photodynamic therapy and 5-Fluorouracil (750mg) on two consecutive days, repeated at an interval of 21 days^{18,19}.

Case report

A 32 years old man reported to the Department of Dermatology and Venereology of Chittagong Medical College Hospital in March, 2011 with a cauliflower like growth on his right temple that had enlarged rapidly over several months. He also presented numerous brown hypopigmented lesions on his forehead, scalp, trunk and extremities. According to the patient's statement he was apparently healthy since birth and at the age of four, he developed numerous warty lesions to his extensor surfaces of forearm and dorsal surfaces of fingers, then gradually he developed hypopigmented lesions spreading over the trunk, face and extremities. At the age of 29 years he developed some growths on his scalp and two of them were surgically removed and diagnosed as SCCs. Patient had no family history of skin cancer or any history of radiation, or history of consanguinity of marriage of his parents, nor any drug history. None of his relatives suffered from such disease. He was a carpenter and had to receive intense sun exposure on a daily basis.

On physical examination patient revealed a cauliflower like ulcerated fissured growth 2cmx 2cmx1.5 cm on the right side of scalp. On the left side there were two depressed scars with alopecia.

On his trunk, extensor extremities numerous hypopigmented macules and patches like pityriasis versicolor and scaly plaques like warty lesions on dorsal surfaces of fingers and upper arms.

There were also seborrheic keratosis like lesions in front of the neck. There was no finding on mucosa, palms and soles. Histopathology of verruca plana like lesion from left arm showed acanthosis and hyperkeratosis in the epidermis. Vacuolated cells were present in the stratum malphigi and granular layer and a few diskeratotic cells were also seen in the lower parts of epidermis. Another biopsy specimen from scalp showed anaplastic squamous epithelial cells arranged in cords and pearls. Areas of necrosis were seen and cells were poorly differentiated. No abnormality was detected in X-ray skull except soft tissue swelling. Other systemic examinations and laboratory investigations revealed no abnormality. HPV typing could not be carried out due to lack of facilities, Fig: 1, SCC on the scalp of the EV patient.



Fig 1: SCC on the scalp of the EV patient



Fig 2: Pityriasis Versicolor like lesions of the EV patient



Fig 3 : Seborrheic Keratosis like warty lesions

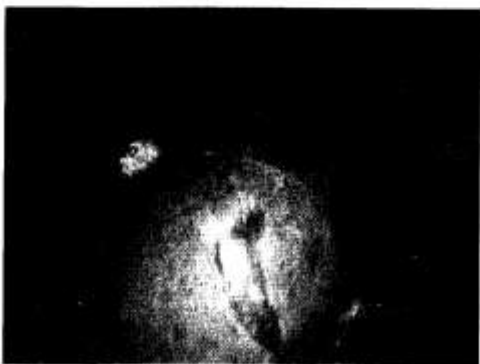


Fig 4 : Scar mark of previously excised SCC

Discussion

EV is a rare disorder of skin characterized by an inherited susceptibility to infection with specific HPV. Our patient was a 32 year old male with classic lesions of EV, ie macule, scaly patches/plaques, verruca plana and seborrheic keratosis like lesions. These findings correlate with the observations of many authors and investigators^{1,10,15}. Onset of these lesions were between the ages of 1-20 years. Our patient developed the cutaneous lesions at the age of four which is consistent with other studies¹⁵. Initial appearance of cutaneous tumours were between the ages of 15-24 years. In one study six of seven cases had malignant cutaneous tumours which revealed squamous cell carcinoma on histopathological examination¹⁰. Our patient developed cutaneous tumours at temple at 29 years of age and histopathological examination revealed SCC. Surgical excision of SCC and skin grafting was done. He is now under our supervision and is advised to avoid excessive sun exposure.

Conclusion

EV is a rare genodermatosis characterized by persistent HPV infection and cutaneous SCC. Genetic inheritance patterns have been implicated resulting in defective cutaneous immunity against HPV. Sun protection and life long observation for early diagnosis of malignant/premalignant lesions which then can be treated with surgical excision/grafting or ablated locally, is imperative for improved prognosis and survival of EV patients.

Disclosure

All the authors declared no competing interests.

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