Acrokeratosis verruciformis of Hopf in family
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ABSTRACT

Acrokeratosis verruciformis of Hopf (AKV) is a rare disorder of keratinization inherited in an autosomal dominant fashion. A 15-year-old female presented with numerous skin-colored papular lesions over the neck as well as dorsa of the hands and feet of 7 years duration. Similar lesions were noted in her mother. Six other members of her family showed similar lesions with similar site of involvement. Presence of characteristic warty papules and histopathology led to diagnosis of a rare condition of acrokeratosis verruciformis.

Key words: Follicular papules, familial acrokeratosis verruciformis, warty papules

INTRODUCTION

Acrokeratosis verruciformis of Hopf (AKV) is a rare disorder of keratinization inherited in an autosomal dominant fashion. It usually presents with multiple small, flat, flesh-colored, warty papules on dorsa of the hands, feet, knees, elbows, and on forearms.[1] These papules may develop on other sites either in groups or discretely. The eruption affects both genders and is usually present at birth or appears in early childhood. It shares some of the features of the acral variety of Darier’s disease (DD). Acral DD may be indistinguishable from the AKV in childhood when the other features of DD may not be apparent. Some of the lesions that may present for long time may transform into squamous cell carcinoma.[2]

CASE REPORTS

Case 1
A 15-year-old female presented with complaints of multiple small, firm eruptions over neck and dorsum of hands and feet since 7 years. Initially the patient noticed few, small skin-colored papules over dorsum of hands and feet, which gradually over a period of 3 months extended over both the forearms and the neck. The patient noticed gradual increase in size and number of the lesions, which were asymptomatic. On examination, multiple skin-colored, small (approximately 0.5 cm), discrete warty papules were present mainly over forearms, feet, and neck [Figure 1a and b]. There were no lesions over palms, soles, nails, oral mucosa, and seborrheic areas of trunk and face. Other systemic examinations were within normal limits. Routine blood investigations were within normal limits. With the characteristic clinical findings a probable diagnosis of AKV with differential diagnosis of DD, epidermodysplasia verruciformis, and porokeratoses were made. Biopsy was taken from right forearm and histopathologic examination showed hyperkeratosis, hypergranulosis, papillomatosis with epidermis showing characteristic “church spires” appearance and absence of acantholysis and dyskeratosis [Figure 2a and b]. Considering the above, the diagnosis of AKV was made. Interestingly, the patient also gave history of similar lesions in her mother.

Case 2
Mother of the patient (Case 1) had multiple, flesh-colored, discrete, warty papules since 6 years of age. Initially the lesions were limited to dorsum of the hands and feet, which then gradually over months developed over forearm and neck [Figure 3a and b]. The lesions continued to increase in number till 20 years of age. Palms and soles were normal. The mother gave history of similar lesions in her mother, four of the five sisters, and one of the two brothers [Figure 4].

DISCUSSION

AKV occurs due to heterozygous missense mutation in ATP2A2 gene, the gene involved in DD. The ATP2A2 gene encodes sarcoendoplasmic reticulum calcium (SERCA) ATPase 2 pump.
The lesions typically present over acral region that increases slowly in number and persist throughout life. AKV may show involvement of palms and soles in the form of palmar hyperkeratosis and interrupted dermal ridges in the finger pads and palms. The histopathology shows classical feature of "church spires" appearance without dyskeratosis. The patient may present with the lesions that may mimic acral form of DD, epidermodysplasia verruciformis, and porokeratoses.

DD and AKV are believed to be allelic to each other due to the occurrence of similar gene defect in both the diseases. Coexistence of AKV and DD has been reported in past. In DD the site of predilection are the seborrheic area of the trunk and face where greasy, keratotic, foul-smelling, and skin-colored papules are seen with nail abnormalities in the form of fragility of the nail and red and white longitudinal stripes, which were absent in our cases. DD showed development of dyskeratosis of lesions in contrast to the lesions in AKV. Although relationship between AKV and DD has been discussed repeatedly, there is no doubt that AKV usually occurs as an independent entity in family. In epidermodysplasia verruciformis, the warty lesions of viral origin are bigger in size, often present widespread all over the body and unlike AKV may show mucosal involvement along with characteristic histopathologic features of hyperkeratosis, acanthosis, vacuolation, and ballooning in the keratinocytes. Disseminated porokeratoses is characterized by widely disseminated, skin-colored, flat papules with peripheral hyperkeratotic border, which usually begin in childhood with classical histopathologic features of hyperkeratosis, parakeratosis, cornoid lamella in stratum corneum and spongiosis. AKV has been reported in association with dilated cardiomyopathy as a result of inability to transport calcium in myocardial cells secondary to the mutation in SERCA2. Farro et al. reported an unusual association of AKV with multiple keratoacanthomas. The treatment of AKV is topical retinoids, cryotherapy, and carbon dioxide laser ablation. Oral retinoids showed variable results with a few cases, which have been successfully treated with acitretin. As the patient was economically poor only retinoic acid 0.05% was given for topical application with no response after second month of follow up.

Our case showed classical AKV lesions with characteristic histopathologic features. Presence of family history affecting six other members is interesting in this case.

We could find only a few AKV cases published in India. Our patient is one of the typical cases with family history of AKV.

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