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Type Two Segmental Darier's Disease – A Case Report

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ABSTRACT

Darier's disease (DD) or Keratosis follicularis is a rare dominantly inherited genodermatosis characterized clinically by presence of multiple pruritic discrete scaly and keratotic papules in seborrheic areas of the body with characteristic nail involvement and mucosal lesions. Histologically focal areas of acantholysis in the suprabasal layer of epidermis, lacunae within the epidermis and dyskeratosis are seen. Segmental forms of Darier's disease are classified into two clinical subtypes: type 1 with distinct lesions on a background of normal appearing skin and type 2 with well-defined areas of Darier's disease occurring on a background of less severe non-mosaic phenotype. Although there are several clinical variants of Darier's disease, few cases of segmental Darier's disease have been described in the literature. We describe a 31 year old lady with type 2 segmental Dariers disease. This unique clinical variant of Darier's disease has been described very rarely.

Keywords: Darier's disease, Genodermatoses, Acantholysis, Dyskeratosis, Type 2 segmental

INTRODUCTION

Darier's disease is a rare autosomal dominant genodermatosis, initially described by Prince Marrow in 1886 and later by Darier and White in 1889. It has high penetrance, variable expressivity and worldwide distribution [1,2]. It is caused by a defect in ATP2A2 gene located on 12q23-23 chromosome [3]. The onset of DD generally occurs during the first two decades of life, although onset as late as the fourth decade is not uncommon [4]. It mainly presents over the seborrhoeic areas as multiple brownish and pruritic papules along with palmoplantar pits, nail dystrophies (V-shaped nicking and ridging), hyperkeratotic papules on the dorsal aspects of the hands and feet and cobblestone papules may be seen on oral mucosa [1,4]. Histopathologically characterized by focal suprabasilar acantholysis and dyskeratotic keratinocytes known as corps ronds and grains in the stratum spinosum and corneum, respectively [2,3].

CASE REPORT

A 31 year old lady presented with multiple verrucous lesions on face, trunk, upper and lower limb since childhood. There was history of photosensitivity. The lesions aggravated on sun exposure. Family history was non-contributory. Cutaneous examination revealed multiple, hyper pigmented, verrucous papules and plaques involving the seborrheic areas of the face like nasolabial folds, forehead, retroauricular areas and cheeks **(Figure 1)**.

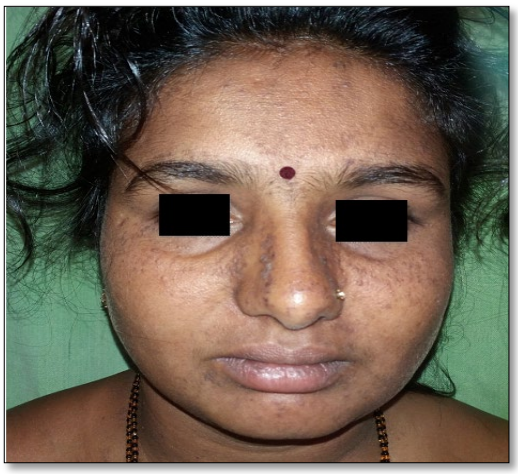

Figure 1. Multiple, hyperpigmented, verrucous papules and plaques involving the seborrheic areas of the face like nasolabial folds, forehead, retroauricular areas and cheeks.

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Lesions were also present on the neck and right supraclavicular area **(Figure 2)**.

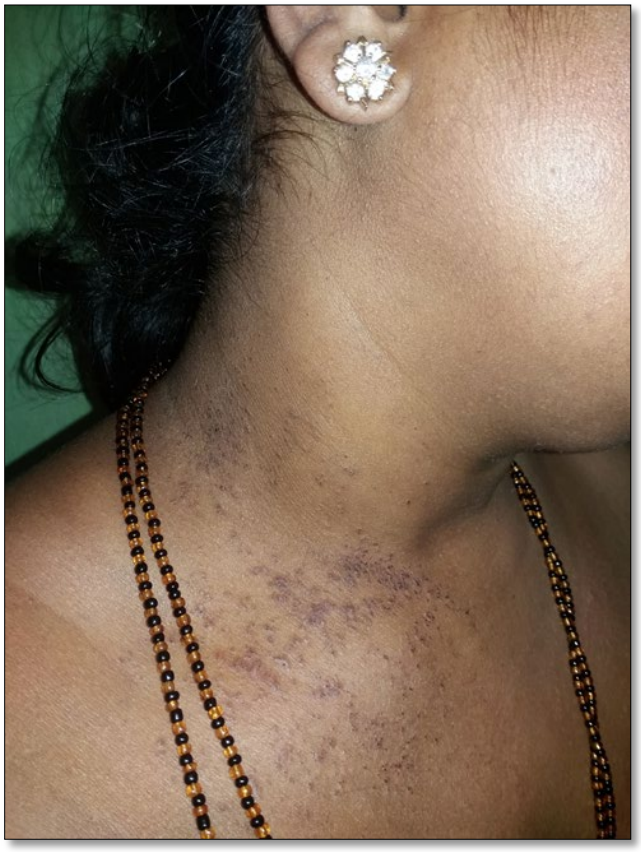

Figure 2. Multiple, hyperpigmented, verrucous papules and plaques on the neck and right supraclavicular area.

Few lesions were distributed linearly on right forearm and dorsum of right foot extending to the leg **(Figure 3)**.

Figure 3. Lesions distributed linearly on right forearm.

Multiple guttate, hypopigmented macules were seen over the arms, abdomen and chest **(Figures 4 and 5)**.

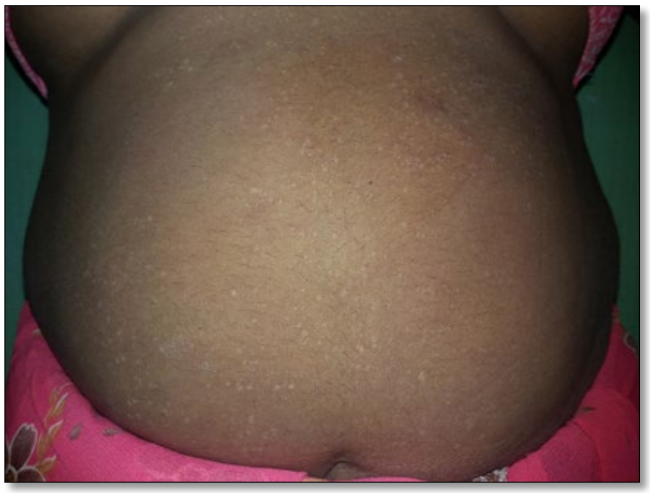

Figure 4. Multiple guttate, hypopigmented macules seen over the abdomen.

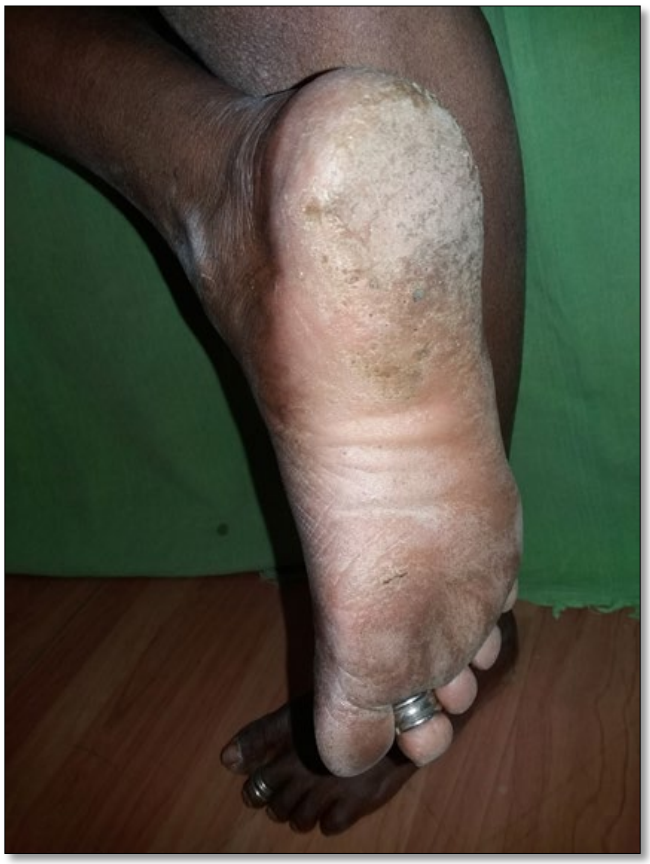

Figure 5. Shallow pits present on the soles.

Shallow pits were present on the palms and soles and V-shaped nicks were seen on the distal edge of right thumb nail. Oral mucosa revealed cobble stone papules. A punch biopsy was taken from hyperpigemnted papules on the right leg. Specimen was sent for histopathological examination. Epidermis showed hyperkeratosis, acanthosis,

hypergranulosis, suprabasal lacunae and cleft formation. Corps ronds were noted in granular layer. Superficial dermis showed mild perivascular lymphocytic infiltrates, a picture consistent with Darier's disease **(Figure 6)**.

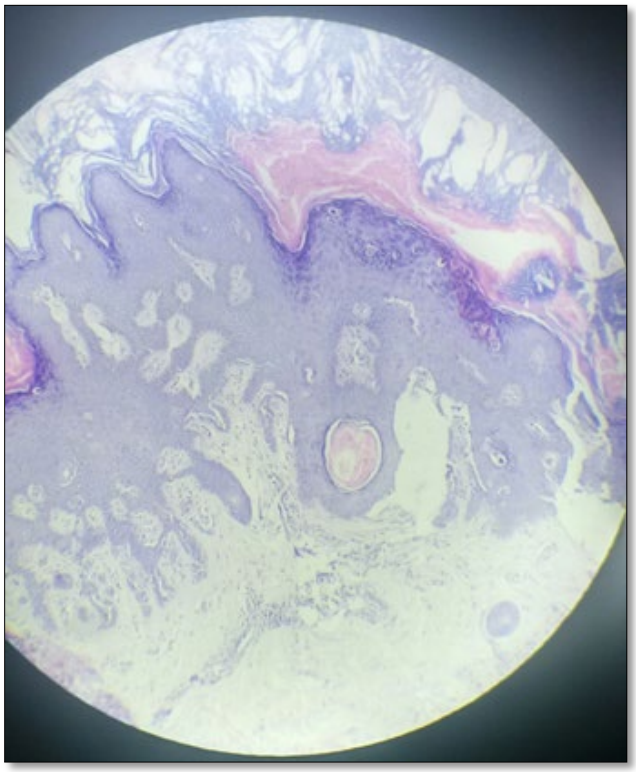

Figure 6. Showing hyperkeratosis, acanthosis, hypergranulosis, corps rounds in granular layer. Superficial dermis shows mild perivascular lymphocytic infiltrates.

The diagnosis of type-2 segmental Darier's disease was made based on clinical and histopathological examination. The patient was treated with oral Isotretinoin 20 mg OD, topical tretinoin 0.05% cream, emollients and a broad spectrum sunscreen. One month later, marked improvement was noticed in the form of reduced photosensitivity and flattening of lesions over the nasolabial fold and on legs **(Figure 7)**.

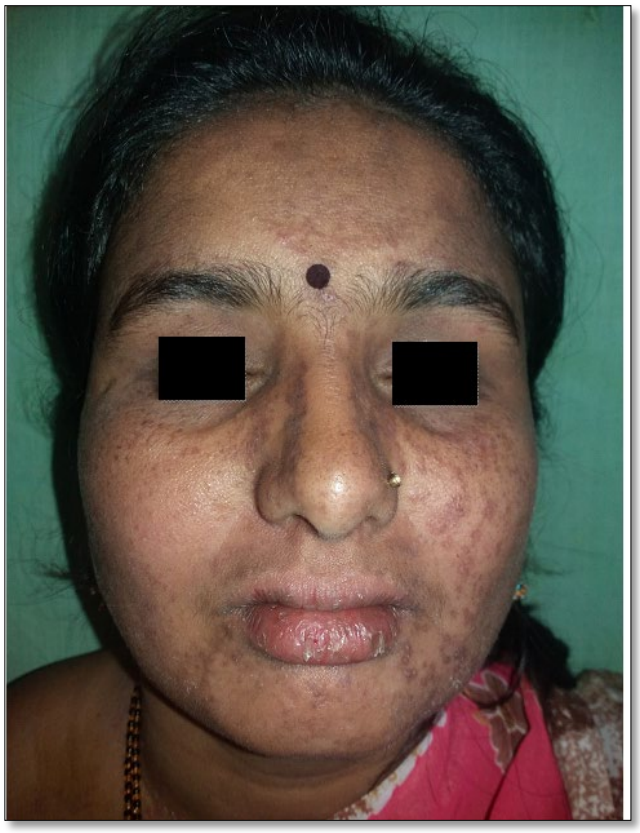

Figure 7. Flattening of lesions over the nasolabial fold after treatment with oral isotrenoin.

DISCUSSION

DD was independently reported by Darier and White in 1889 [2]. Its pathogenesis has been linked to mutations involving the ATP2A2 gene that codes for sarco/endoplasmic reticulum calcium ATPase isoform 2, a pump that transports calcium (Ca^{2+}) from cytosol to lumen of the endoplasmic reticulum, thus hampering the intracellular Ca^{2+} signaling and keratinocyte intercellular adhesion and differentiation [5]. The clinical findings in Darier's disease include keratotic, crusted red-brownish papules distributed over the seborrheic areas such as trunk, scalp margins, face and lateral aspects of the face. The papules generally coalesce to form large verrucous plaques. Nearly half of the patients have flat, shiny warty papules on the dorsal aspect of the hands. Painless whitish papules may be observed in oral mucosa in 15% of patients [3]. Variants of Darier's disease, including linear, bullous and generalized hypertrophic types, have been reported. Although patients with the disorder are not systemically ill, both mild and severe disease may be disfiguring, with profound effects on self-image. Pruritus occurs in many cases and is often severe. Secondary bacterial contamination of the skin is not uncommon, with pyoderma and a refractory malodor often resulting [6].

After reports of unilateral or zosteriform patterns in patients with Darier's disease, the synonyms acantholytic

dyskeratotic epidermal nevi, segmental Darier's disease, linear Darier's disease and localized Darier's disease were started to be used for describing mainly the same localized clinical condition observed in Darier's disease. About 10% of patients with Darier's disease are estimated to have linear or zosteriform pattern, localized on one-half of the body and linear Darier's disease is accepted as a mosaic form of Darier's disease [3]. Two patterns of segmental DD are recognised namely type 1 and type 2 segmental Dariers disease. In type 1 pattern, lesions follow Blaschko's lines unilaterally, whereas a type 2 disease demonstrates focal areas of increased severity in patients with generalized DD. In our patient, the verrucous lesions were predominantly on the right side of the body. Lesions in the supraclavicular area were distributed in zosteriform pattern and those on the right leg were in arranged linearly. Also, guttate hypopigmented macules were found on the left forearm, abdomen and back.

Localized DD is considered a genetic mosaic of generalized DD resulting from a post-zygotic somatic mutation in early embryogenesis. The zosteriform pattern described in localized DD would actually exhibit a Blaschkoid rather than a dermatomal distribution [5].

Abnormal keratinocyte-keratinocyte adhesions and aberrant epidermal keratinisation are histological features of DD. Histology shows dyskeratosis in spinous layer (corps rounds) and stratum corneum (grains), suprabasal acantholysis and clefts (lacunae). The underlying dermal papillae, covered by a single layer of epithelium (stratum basale), project into these clefts and form villus like structures. A large keratin plug, often showing focal parakeratosis, overlies each lesion. Hyperkeratosis is common [4,6]. Electron microscopy reveals loss of desmosomes, breakdown of desmosomes keratin intermediate filament attachment and perinuclear aggregates of keratin intermediate filaments. The differential diagnosis includes acne vulgaris, seborrheic dermatitis, acanthosis nigricans, confluent reticulate papillomatosis, prurigo pigmentosa and reticulate erythematomucinous syndrome. In acanthosis nigricans lesions are more pigmented. In confluent reticulate papilomatosis the lesions are flat and confined to upper trunk. The harshness of papules on palpation helps to distinguish it from visually similar conditions like prurigo pigmentosa and reticulate erythematomucinous syndrome. Histologically the disease needs differentiation from benign familial pemphigus, Grover's disease and pemphigus vulgaris. Immunofluroscence of skin biopsy differentiate different acantholytic disorders [2].

The basic principles in the control of Dariers disease is avoidance of ultraviolet (UV) light, sweating and maintainence of personal hygiene [4]. Systemic retinoids have been the most effective treatment modality for generalised forms, but the side-effect profile limits their use [1]. Treatment options for segmental DD mainly include topical therapies because of localized involvement. Avoiding precipitating factors such as sunlight and heat may improve the symptoms. Emollient containing urea or lactic acid helps in reducing crusting and irritation. Topical retinoids improve the lesions by reducing hyperkeratosis. Successful treatment of segmental DD using ablative fractional laser resurfacing has been reported [5].

Patient should be informed about the complications and the care required. The emotional status should be evaluated [9]. Regardless of clinical severity and treatment options, the patient should receive genetic counseling with information on inherited condition and risk of transferring to offspring.

REFERENCES

1. Bakar O, Durmaz EO, Sezer E, Çetin ED (2015) Type 1 segmental Darier's disease: Report of two cases with favorable response to topical retinoids. Hong Kong J Dermatol Venereol 23: 71-75.

2. Mahboob A, Yaqub F, Shahzad Z, Afzaal M, Hanif M, et al. (2010) Classical presentation of Darier's disease: A rare disorder of keratinisation - Case report. J Ayub Med Coll Abbottabad 22: 230-233.

3. Dogan S, Karaduman A, Erkin G, Gokoz O (2011) Effective treatment of linear Darier's disease with topical retinoids: Case report and review of the literature. Acta Dermatovenerol Croat 19: 206-211.

4. Bhat RM, Ullal KR, Pinto AC, Sukumar D (2010) Darier-White disease in siblings responding to isotretinoin. Indian Dermatol Online J 1: 18-20.

5. Palanisamy A, Kandasamy S, Vadivel S, Kothandapany S (2015) Type one segmental Darier's disease. Indian J Dermatopathol Diagn Dermatol 2: 34-36.

6. Del rosso JQ, Horowitz DC (1986) Treatment of Darier's disease with isotretinoin: Report of a case. J AOA 86: 634-638.