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Case Report

Dermatology Section

Late onset Darier's Disease with Palmoplantar Keratoderma: A Case Report

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ABSTRACT

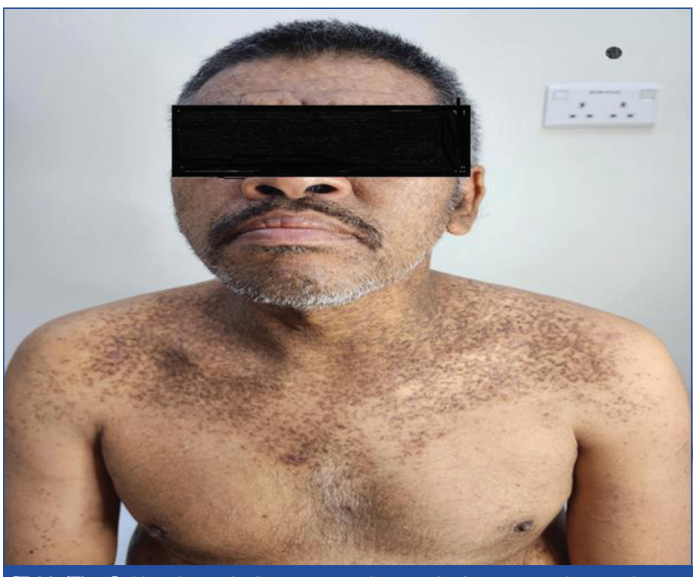
Darier's disease is an infrequently encountered autosomal dominant condition characterised by complete penetrance but variable expression. It is characterised by abnormal keratinisation and epidermal adhesion deficiency, clinically presenting as greasy keratotic or warty papules and plaques, primarily affecting seborrheic regions and flexures. Additional manifestations include palmar pits, nail abnormalities, cobble-stoning of the oral mucosa, and even neuro-psychiatric issues. In extremely rare cases, mucosal involvement can occur in the oral, laryngeal, Oesophageal, or rectal areas. Familial Darier's disease typically emerges during puberty. Here, the authors present a unique case of 55 years old male patient of Darier's disease with delayed onset, despite a significant family history of the condition. The clinico-pathological aspects, highlighting the presence of palmo-plantar keratoderma are also discussed. Treatment included the application of topical hydrocortisone 1% cream twice daily for two weeks, then once daily for two weeks along with dexpanthenol once daily for eight weeks.

Keywords: Hyperkeratotic papules, Photodermatitis, Pruritis

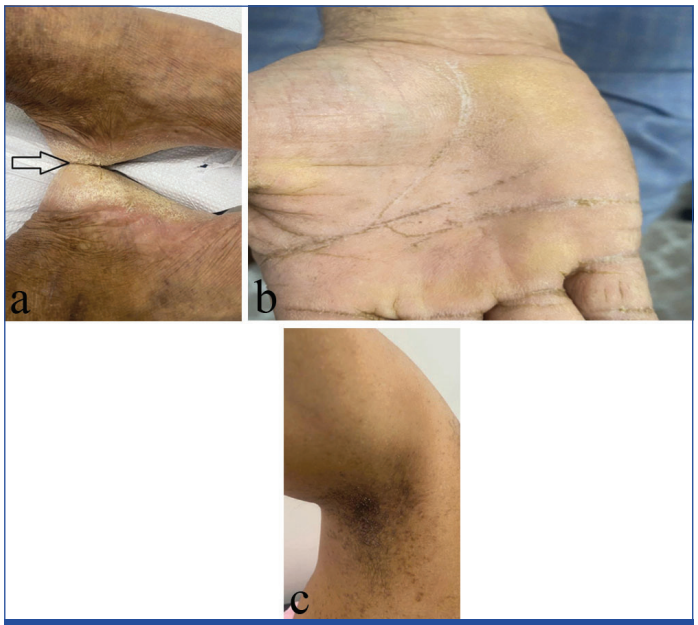
CASE REPORT

A male patient 55-year-old driver by profession, who is of Indian origin, came in with pruritic papules on his hands, ears, neck, and face. These papules had appeared three months prior after extended sun exposure. When exposed to sunshine, heat, or perspiration, the patient noted that the itching was worsened and there was foul odor. Interestingly, the skin problems of the patient's mother and sister were likewise identical.

On physical examination, numerous hyperpigmented, skin-colored hyperkeratotic papules were observed; these papules eventually became plaques and caused skin to thicken since the onset of symptoms [Table/Fig-1]. These lesions, some of which became plaques, were seen bilaterally on the forearms, upper chest, ears, neck, and axillae. But the anogenital and groin areas did not experience any changes. The soles showed many hysterix-like hyperkeratotic papules that combined to form plaques, and examination of the palms revealed generalised keratoderma [Table/Fig-2a-c]. In addition to denying any neuro-psychiatric problems, the patient's scalp and mouth mucosa seemed normal.



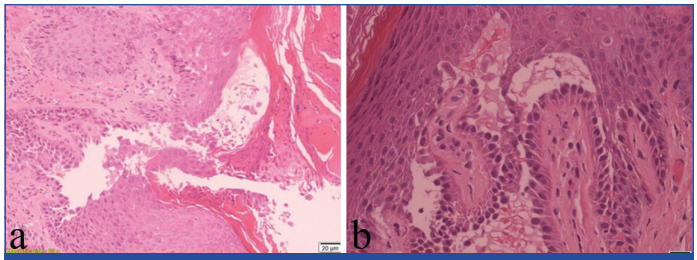
[Table/Fig-1]: Hyperkeratotic dirty warty papules over the face, ears and upper chest.



[Table/Fig-2]: a) Plantar keratoderma. b) Diffuse thickening of the palms. c) Papules on the axillae

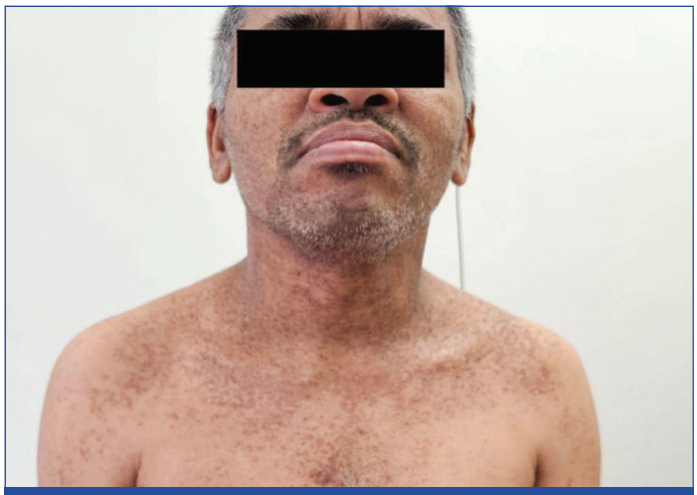
The provisional diagnosis was of photodermatitis or Darier's disease based on the clinical appearance. The differential diagnosis was photodermatitis, pemphigus foliaceus, and seborrheic dermatitis. Notably, the patient's mother and sister had previously experienced comparable skin issues, which added to the understanding of the disorder's possible genetic origin. As the patient's relatives live in India, supporting images from them could not be obtained.

Histopathological examination of the tissue sample taken from the chest, revealed supra-basal clefts with acanthosis, dyskeratotic cells in the stratum spinosum and stratum granulosum (referred to as "corps ronds"), and parakeratotic cells in the stratum corneum resembling "grains" or focal acanthotic dyskeratosis. These clefts contained acantholytic cells, mild perivascular lymphocytic infiltrate, and occasional eosinophils in the upper dermis. There is villi-like projection of papillary dermis into the supra-basal cleft. No atypical or malignant cells were identified [Table/Fig-3a,b].



[Table/Fig-3]: a) Suprabasal clefts with acanthosis and dyskeratotic cells in the stratum spinosum and stratum granulosum. Haematoxylin-eosin stain. Original magnification, ×200. b) Corps and ronds characterised by cells with small pyknotic nuclei, a perinuclear clear halo and eosinophilic cytoplasm. Haematoxylin-eosin stain. Original magnification, ×400.

Based on the patient's history, examination, and histopathological findings, a diagnosis of Darier's disease was confirmed. Treatment included the application of topical hydrocortisone 1% cream and dexpanthenol 50 mg/g to the lesions twice daily, along with recommendations for general hygiene and measures to avoid sunlight, heat, friction, and genetic counseling. Post eight weeks, the patient was advsied to continue Dexpanthenol for one more month and follow up after one month [Table/Fig-4].



[Table/Fig-4]: Follow-up image after eight weeks of therapy.

DISCUSSION

An autosomal dominant disease called Darier's disease is characterised by aberrant keratinisation. It primarily manifests as greasy keratotic papules and plaques in seborrheic regions. Even with a family history, onset might take time and present with a variety of symptoms [1-3]. The pathogenesis of Darier's illness is complicated and arises from a mutation in the ATP2A2 gene, which codes for the calcium pump SERCA2 in the endoplasmic reticulum [4-6]. The defective calcium transport caused by this hereditary abnormality is essential for the correct processing of junctional proteins. As a result, acantholysis is triggered by aberrant processing, which reduces keratinocyte cohesiveness. Histopathology identifies the resulting dyskeratotic/apoptotic cells as corps ronds, which are the result of a cellular stress response brought on by the depletion of calcium stores. Several factors, including friction, heat, humidity, Ultraviolet (UV) radiation, and small injuries, can aggravate the disease's symptoms [4].

In the context of clinical practice, a variety of illnesses, such as candida infection, seborrheic keratoses, and dermatitis, must be considered while making differential diagnosis. Grover's disease may resemble the papulo-vesicular type, whereas pemphigus vulgaris, impetigo, Hailey-Hailey disease, and Langerhans cell histiocytosis may resemble the erosive and bullous forms. Histopathology and immunofluorescence assays may be required to distinguish the acral form from plane warts and the vegetating form from pemphigus vegetans [7].

In this case, the patient's mother and sister reported of similar skin lesions. A similar case of late onset case of Darier's disease was reported by Dhanaraj M et al., in a 48-year-old male wherein his mother, sister and brother had similar complaints with an earlier onset of the disease [8].

Furthermore, it is critical to comprehend the variety of ways that keratosis follicularis manifests itself. Notably, it might appear as distinct, punctate keratoses on the palms and soles that resemble tiny, centrally depressed pits or small, hyperkeratotic papules [9]. These papules may eventually fuse together, thickening the palms and soles overall. Furthermore, several additional variations of palmoplantar have been reported, including scattered palmo-plantar Ortho-keratotic Filiform Hyperkeratosis (PPOFH) and isolated palmoplantar keratodermas [8,10,11].

In this case, mild improvement was noticed after topical application of hydrocortisone 1% cream and dexpanthenol. Hanna N et al., (2022) carried out a thorough review of treatment options to find efficient management strategies for Darier's disease. Their findings provided insight into the potential benefits of topical hydrocortisone 1% cream and dexpanthenol in treating the symptoms of this difficult-to-treat dermatological condition. The anti-inflammatory properties of topical hydrocortisone 1% cream help to lessen the erythema, irritation, and itching linked to Darier's illness. A vitamin B5 derivative called dexpanthenol encourages skin hydration and wound healing, which may lessen the condition's typical dryness and scaling. Despite not addressing the underlying genetic etiology of Darier's disease, both medications offer symptomatic alleviation and adjunctive support in its management [12].

CONCLUSION(S)

Successful clinical care of Darier's disease requires a thorough grasp of the condition. This includes being aware of its genetic foundation, the range of clinical manifestations, how to grade the severity, and differential diagnosis. A comprehensive understanding of this intricate dermatological illness can be developed by healthcare professionals through the integration of information from multiple studies and clinical experiences. For individuals with Darier's disease, this all-encompassing approach allows for precise diagnosis, customised treatment plans, and better results.

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