

Case Report

Darier's Disease with Comedons

Ikram-ullah Khan and Uzma Khalil

Department of Dermatology, Pakistan Institute of Medical Sciences, Islamabad

Darier's disease is an uncommon genodermatosis which is difficult to recognize & usually refractory to treatment. We present a variant of Darier's disease with comedons showing histological features of Darier's disease.

Key words: Comedons; Darier's Disease

Introduction

Darier's disease or Darier-White disease is also called "Keratosis Follicularis".¹ The other synonym is "Dyskeratosis follicularis".² It is an uncommon genodermatosis which is difficult to recognize and usually refractory to treatment.³

It is an autosomal dominant condition characterized by persistent eruption of hyperkeratotic greasy papules. It is caused by mutations in genes encoding for calcium pumps of epidermal keratinocytes.³ The histological examination shows suprabasal acantholysis with overlying dyskeratosis.

We report our case as an unusual case of Darier's disease which was associated with comedons showing histology of Darier's disease.

Case Report

A 29 years old male presented with brownish, greasy papules on face, arms and trunk for last 8 years. The papules were non itchy but associated with comedons and pitted scars in some areas like back. Oral mucosa, scalp, hair and nails were found to be normal. A skin biopsy was taken from back keeping in mind the differentials of nodulocystic acne and seborrheic dermatitis. The biopsy showed marked dyskeratosis, corps ronds, grain cells and suprabasal acantholysis. Hyperkeratosis and follicular plugging were also noted. Dermis showed chronic inflammatory infiltrate

(Figures 2, 3 & 4). So it was labelled as a case of Darier's disease. He was given topical emollients and topical retinoids

Discussion

Darier's disease was described by Darier and White in 1889. It has world wide distribution⁴. Darier disease is caused by mutations in ATP2A2 gene at chromosome 12q 23-24;1 which encodes sarcoplasmic and endoplasmic reticulum calcium ATPase type 2 SERCA2.^{5,6}

SERCA2 is a member of a family of ion pumps that maintains high calcium concentration in cytoplasm. It has two isomers (SERCA₂ a) expressed in smooth muscles and cardiac muscles. The (SERCA₂ b) is expressed in epidermal keratinocytes.

Darier disease is caused by gene deletions and insertions at ATP2A2 gene at chromosome 12q which encodes SERCA2b (ion pump). The mutations result in abnormally expressed protein. i.e., SERCA2b (ion pump). The tonofilament desmosome complex is poorly formed, so cells don't adhere with each other.

In earlier lesions of Darier disease, lacunae appear in cells above basal layer. Small groups of cells around lacunae become separated from their neighbours and enlarge. They present darkly staining nucleus and clear cytoplasm. These are CORPS ROUNDS. They show premature partial keratinization (DYSKERATOSIS). The other group of

cells are also present which are spindle shaped. These are "GRAIN CELLS".



Fig. 1: Brownish Greasy Papules on Chest

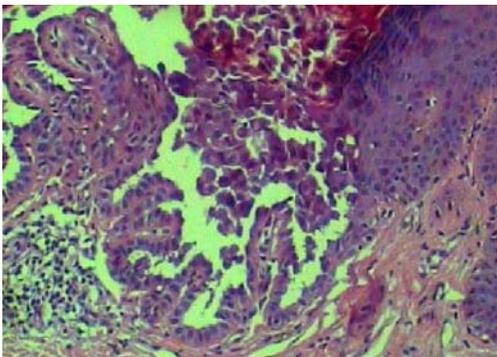


Fig. 2: Skin Biopsy showing Suprabasal Acantholysis and Dyskeratosis (H & E 200 X)

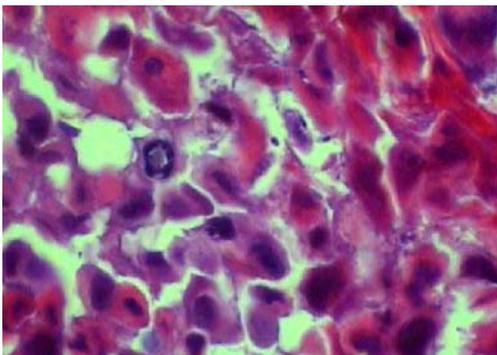


Fig. 3: Skin Biopsy showing Corps Ronds (H & E 400 X)

Grain cells are small cells with

shrunken cytoplasm seen in upper layers of epidermis. Under electron microscope tonofilaments are separated from desmosomes, so lacunae are formed. Epidermal cells don't adhere properly, so suprabasal acantholysis is found. Defects in SERCA2 may produce these changes as a result of impaired processing of proteins in endoplasmic reticulum.

Focal acantholytic dyskeratosis is found in other disorders like Hailey-Hailey disease and in transient and persistent acantholytic dermatosis.⁷

Although Darier disease presents as firm, rough papule which is skin colored, yellow brown or brown involving scalp, face and trunk. Coalescent papules may form irregular warty papillomatous masses in flexures⁸. They may become malodorous with heavy crusting and may resemble seborrhoea. Sometimes white umbilicated papules on palate may be seen. They resemble nicotinic stomatitis.

Darier disease sometimes presents as unilateral, as segmental disease, as localized disease, or as involving sun exposed parts.⁹ Nails may show white or red longitudinal bands ending in a pathognomonic notch at free margin of nail. Nails are brittle. The disease is exacerbated by light.

The differential diagnosis is usually acne, seborrhic dermatitis and Hailey Hailey disease in case of flexural involvement.

Management involves sun protection, emollients and topical retinoids. Antiseptics can be used for infected plaques. For patients with severe disease oral retinoids can be used. Dermabrasion in limited cases is useful. In some settings topical vitamin - D Analogues have been used with success like Tacalcitol⁴. Severe inflammatory exacerbations are treated with cyclosporin.

The disease runs a chronic relapsing course. General health remains unaffected. Most patients are of normal intellect but in some cases learning difficulties are observed¹⁰ In a study done in Singapore out of 24 patients three patients presented with neuropsychiatric problems.¹¹

In our patient intellect was normal. There was no flexural and nail involvement, rather greasy papules were associated

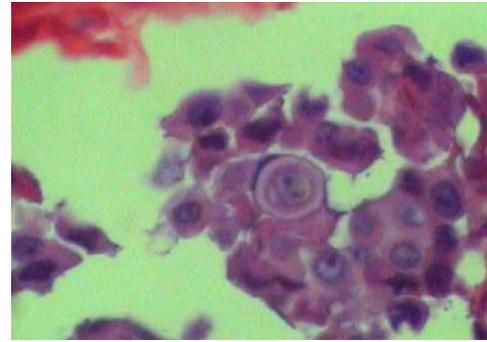


Fig. 4: Skin Biopsy showing Corps Ronds (H & E 1000 X)

with comedons and some pitted scars. So we present our case as a variant of Darier's disease with comedons. The patient successfully responded to emollients and topical retinoids.

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