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Case Report

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Familial amyloidosis cutis dyschromica

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Abstract: Primary cutaneous amyloidosis is a rare progressive disease that is characterized with the deposition of amyloid under the skin instead of internal organs. Major types are the macular, papular, nodular types. Amyloidosis cutis dyschromica is a very rare specific type of vitiliginous amyloidosis. A 16 year-old female patient and 22 year-old male patient, siblings, referred to the hospital with the complaint of non-pruritic diffuse hyperpigmentation beginning from trunk and spreading to all body. The histopathologic findings and crystal violet stain were consistent with amyloidosis cutis dyschromica. All other investigations were normal. There are few reported cases related with this amyloidosis type and it was seldom reported as familial. This case is the first familial case from Turkey.

Key words: Cutaneous amyloidosis, dyschromic amyloidosis, primer amyloidosis

Ailesel amiloidozis kutis diskromika

Özet: Primer kutanöz amiloidozlar nadir görülen, ilerleyici bir hastalık olup, amiloidin iç organlarda depolanmadan deride depolanması ile karakterizedir. Başlıca maküler, papüler, nodüler tipleri görülmektedir. Amiloidozis kutis diskromika vitiliginöz amiloidozisin çok nadir görülen, spesifik bir tipidir. Kardeş olan 16 yaşında bir bayan hasta ve 22 yaşında bir erkek hasta, gövdede başlayıp tüm vücuda yayılan kaşıntısız, difüz hiperpigmentasyon nedeniyle hastanemize başvurdu. Histopatolojik bulgular ve kristal viyole boyası amiloidozis kutis diskromika ile uyumluydu. Diğer tüm tetkikler normaldi. Bildirilen az sayıda olgu bulunmaktadır ve familyal olanları oldukça nadirdir. Bu olgu Türkiye'den bildirilen ilk ailesel vakadır.

Anahtar sözcükler: Kutanöz amiloidoz, diskromik amiloidoz, primer amiloidoz

Introduction

Primary cutaneous amyloidosis is a rare progressive disease of the apparently normal skin that is associated with the deposition of amyloid under the skin instead of internal organs. Major types are macular, papular (lichen), and nodular (tumefactive) ones. Amyloidosis cutis dyschromica (ACD) is a rare, primary localized cutaneous, vitiligous type of the amyloidosis (1,2). There are few reported cases but it was seldom reported as familial (1,3). This case is the first familial case from Turkey.

Case 1

A 16 year-old female patient referred to the hospital with the complaint of non-pruritic diffuse hyperpigmentation beginning from trunk and spreading to all body. There was not intensive sun exposure. She did not have any systemic or cutaneous disease. Her parents are cousins. Two children of the family are sick, and the 3rd one is not.

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In the dermatological examination, there was a diffuse hyperpigmentation with numerous spotted and hypopigmented macules that were located on both lower and upper extremities, trunk, buttocks, and neck. There was no apparent erythema, telangiectasia, freckles, atrophy, or papular lesions. Other aspects of the dermatological examination were normal.

A skin biopsy from the hyperpigmented lesions of the abdomen revealed mildly hyperkeratotic epidermis along with amorphous eosinophilic masses in the papillary dermis with haematoxylin & eosin stain (Figure 2). The crystal violet stain demonstrated purple colored amyloid material (Figure 3). All other investigations (full blood count, biochemical profile, plasma protein electrophoresis, urine protein excretion and examination for Bence-Jones protein, chest X-ray, and abdominal ultrasound) were normal or negative.

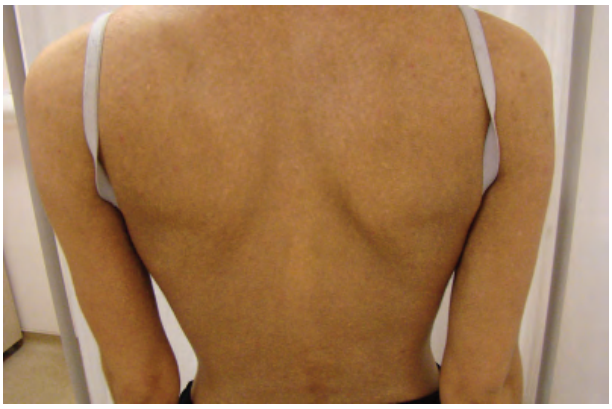

Figure 1. Diffuse hyperpigmentation with numerous spotted and hypopigmented macules that was located on the first patient's trunk.

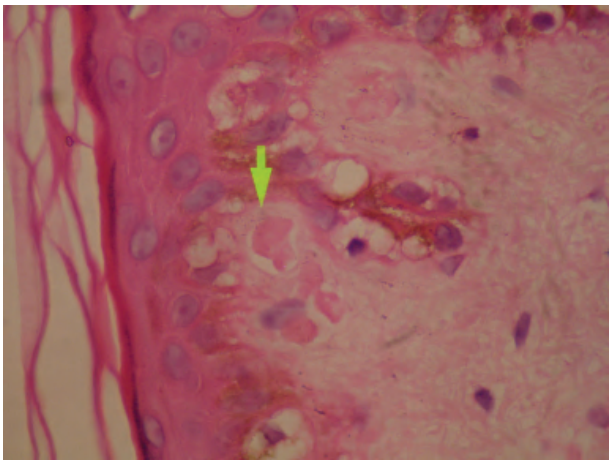

Figure 2. Amorphous eosinophilic masses in the papillary dermis with haemotoxylin & eosin stain (H&E ×100).

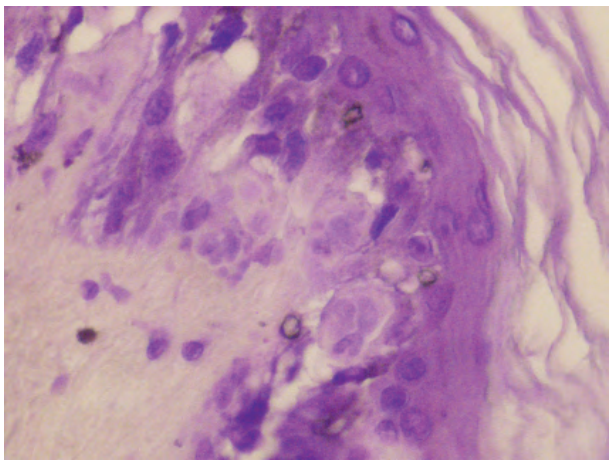

Figure 3. Deposition of the amyloid in the papillary dermis with histochemical examination of crystal violet (Crystal violet ×40).

The patient was treated with acitretin (0.75 mg/kg per day) for 4 months and some improvement in hyperpigmentation was observed, and the dose was reduced to 0.50 mg/kg per day. The patient was continuing with the treatment at the time of writing.

Case 2

We invited the other patient's brother to the clinic. He was 22 years old. He had presented to hospital many times before and had been followed up on the basis of other diagnoses.

The lesions of the patient began in the upper extremities 15 years before and distributed to all of the body except the face. In the dermatological examination we examined diffuse hyperpigmentation with numerous spotted and hypopigmented macules that was located on both of the lower and upper extremities, trunk, and buttocks (Figure 4). There was no other systemic or pathological finding. A skin biopsy from the hyperpigmented lesions of the back revealed mildly hyperkeratotic epidermis along with mild (macular type) amorphous eosinophilic masses in the papillary dermis with haemotoxylin & eosin stain (Figure 5). The crystal violet stain demonstrated the purple colored amyloid material.

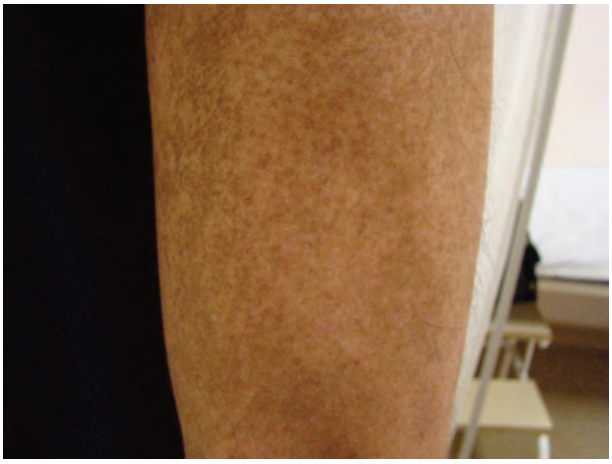

Figure 4. Spotted and hypopigmented macules that was located on the second patient's arm.

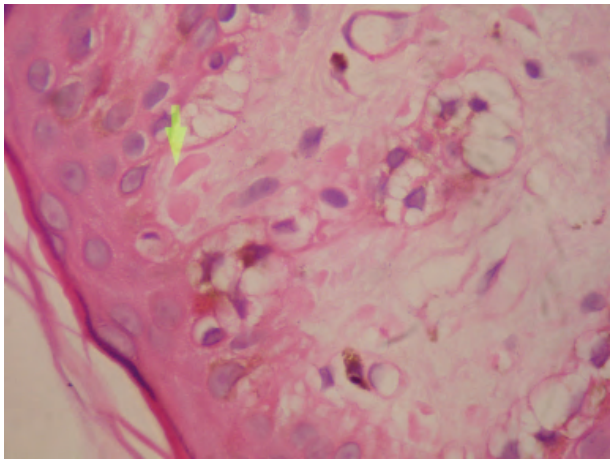

Figure 5. Similar eosinophilic masses below the epidermis in the second patient (H&E ×100).

Same investigations carried out for the previous patients were repeated also for this patient and no other pathological findings were detected.

Discussion

ADC is a rare, primary localized cutaneous type of the amyloidosis that was firstly described by Morishima (4). Main clinical features are dotted, reticular hyperpigmentation with hypopigmented spots without papulation that can be on all over the body, minimal or no itching, onset before puberty and small foci of amyloid closely under the epidermis (4). Both patients had all these symptoms.

Etiopathogenesis of the disease is still not known. It was suggested that ACD is a congenital disease and most important factor of its etiology is sun exposure (2,5). Moriwaki et al. suggested that genetic factors cause ultraviolet B sensitivity and DNA repair defect; then repeated damages to keratinocytes cause forming of amyloid materials in the skin. Amyloid deposits may initially be derived from cytokeratin, possibly after keratinocyte death (6). However, in a few reports and in our cases, there was no sun exposure history and lesions were dense in the sunless localizations.

In the literature, there are a few reports of familial cases (1,3). The occurrence of familial cases accentuates the importance of genetic factors in the etiology of ACD, and some of the clinical overlaps may indicate a variable penetrance (1). Cases accompanying autoimmune connective tissue diseases and primary biliary cirrhosis were reported in the other primary cutaneous localized amyloid types, such as macular and lichenoid amyloidosis (7). However, no another systemic and dermatological disease accompany ACD. In the literature there is only one case accompanying generalized morphea (5).

Differential diagnosis of the disease should include dyschromatosis universalis hereditaria, poikiloderma-like amyloidosis, other rare forms of cutaneous amyloidosis, xeroderma pigmentosum, vitiligo, and macular amyloidosis, (2,6,8). Hypo- and hyperpigmented macules are found in a generalized distribution in the dyschromatosis universalis hereditaria; it begins before puberty, at an average age of 6 years old. However, histologically it can be differentiated from ACD (9). Xeroderma pigmentosum may have similar dyspigmentation, but it is in photodistribution, there is evidence of premature actinic damage, and the genetic bases are known (10). Lentigines and hypopigmented macules occur on dorsal aspects of hands and feet, face, and other sun-exposed sites. Actinic damage begins in infancy and early childhood, and skin cancers often develop during the first decade of life (11). Poikiloderma-like amyloidosis is associated with light sensitivity, short stature, and blister formation or palmoplantar hyperkeratosis (6).

Various therapy options are found for cutaneous amyloidosis and different results are found in the literature. Various treatments, such as topical corticosteroids, topical calcineurin inhibitors, UVB phototherapy, PUVA phototherapy, dermabrasion, keratolytics, dimethyl sulfoxide, capsaicin, and CO2 laser were used based on the symptoms observed (7). In a previous study, successful treatment with systemic acitretin was reported (2).

ACD can be differentiated from other primary cutaneous amyloidoses owing to its unique and characteristic features; and from other diseases in the differential diagnoses through showing deposition of amyloid. It is thought as genetic in the etiopathogenesis due to the familial nature of the case.

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