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An unusual presentation of primary cutaneous amyloidosis

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Abstract

Primary localized cutaneous amyloidosis refers to a group of disorders characterized by deposition of amyloid in the dermis without any systemic involvement. It comprises the following clinical types: macular, lichenoid, nodular, and biphasic. There are also rare variants such as amyloidosis cutis dyscromica and poikiloderma-like cutaneous amyloidosis. We report a case of primary cutaneous amyloidosis in a 17-year-old boy with unusual pigmentation of various patterns (reticulate and diffuse pigmentation with mottling and rippling at places) and hypopigmented atrophic macules. Our patient also had nail, oral, and mucosal pigmentation that have not been described. Amyloid deposits were shown histopathologically in both hyperpigmented and hypopigmented macules.

Keywords: primary cutaneous amyloidosis, poikiloderma like cutaneous amyloidosis

Introduction

Primary cutaneous amyloidosis is a group of disorders characterized by cutaneous deposition of amyloid without any systemic involvement. Various common clinical forms of primary localized cutaneous amyloidosis are macular, lichenoid, nodular, and biphasic. There are also rare variants that include amyloidosis cutis dyscromica, poikiloderma-like cutaneous amyloidosis, bullous and anosacral forms, and genodermatosis associated-amyloidosis [1-5, 10].

Case Synopsis

A 17-years-old boy, presented with asymptomatic hyperpigmentation over the entire body since 8 years of age. There was no history of photosensitivity, inflammatory skin disease, drug intake, exposure to metal/factory work, hypohidrosis, heat intolerance, dental defects, eye or ear complaints, or systemic illness. General physical examination revealed sparse eyebrows over the lateral one-third, depressed nasal bridge, and deviated nasal septum. Beard and moustache were absent whereas pubic hair was normal.

Cutaneous examination revealed dark brown to blackish pigmentation (more pronounced over extensors) predominantly in a reticulate pattern over the neck, trunk, and upper limbs. There was diffuse pigmentation over the face and lower limbs with some rippling and mottling along with barely palpable plaques at places on the lower limbs (**Figure 1**). A few atrophic and hypopigmented macules were present over the lower legs and neck. No telangiectasias were seen.

Palms and soles revealed multiple discrete hypopigmented as well as hyperpigmented macules over a background of diffuse hyperpigmentation. Nails showed diffuse hyperpigmentation, longitudinal melanonychia, dystrophy in the great toes nails (attributed to trauma by patient), and subungual hyperkeratosis in a few toenails and fingernails. Oral examination showed mottling on the hard palate and greyish pigmentation on the tongue (**Figure 2**). Systemic examination was normal. Hematological and biochemical investigations, thyroid function

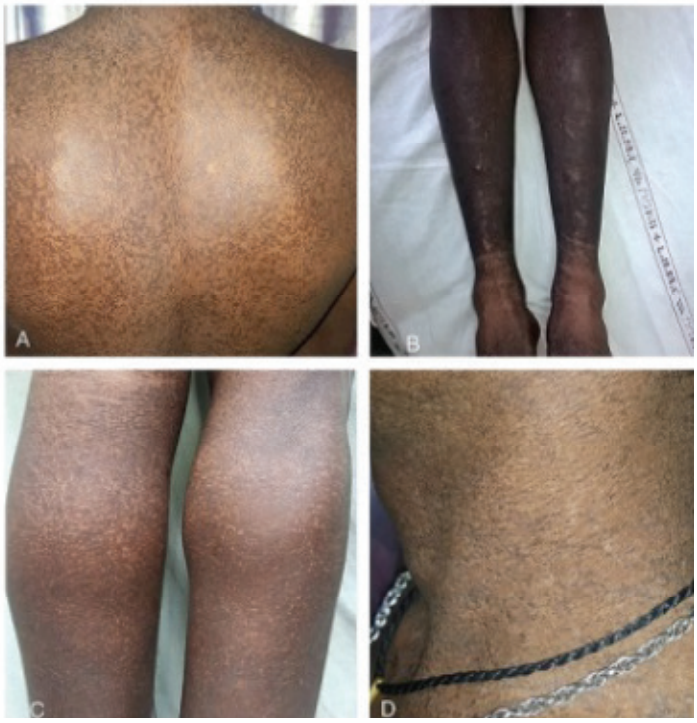

Figure 1. *Various patterns of pigmentation in our patient. A) Reticulate pigmentation over back, B) diffuse pigmentation and barely palpable plaques on legs, C) rippled and mottled pigmentation on legs, D) atrophic and hypopigmented macules on neck.*

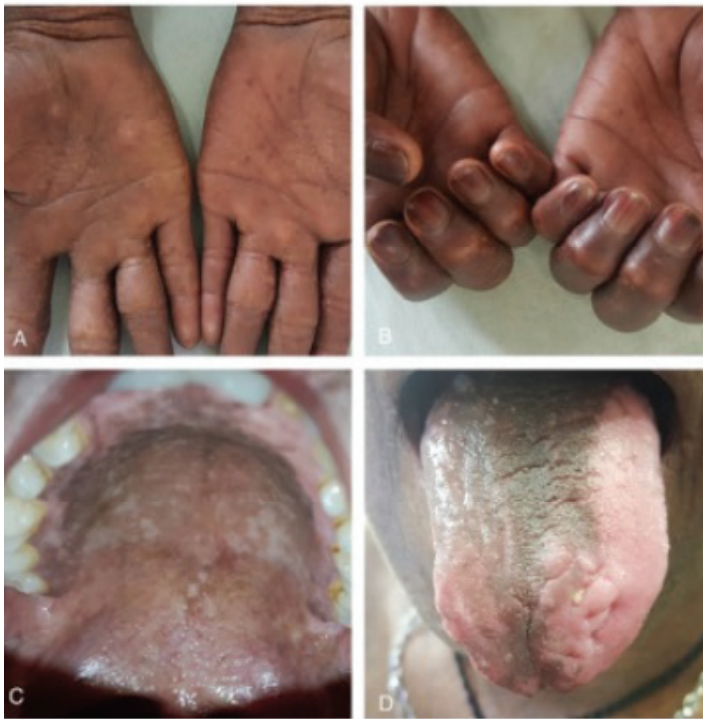

Figure 2. *Palm and nail, with oral pigmentation. A) Mottled pigmentation of palms, B) diffuse as well as linear streaks of brownish pigmentation on nails, C) mottled pigmentation over hard palate, D) diffuse grey pigmentation of tongue.*

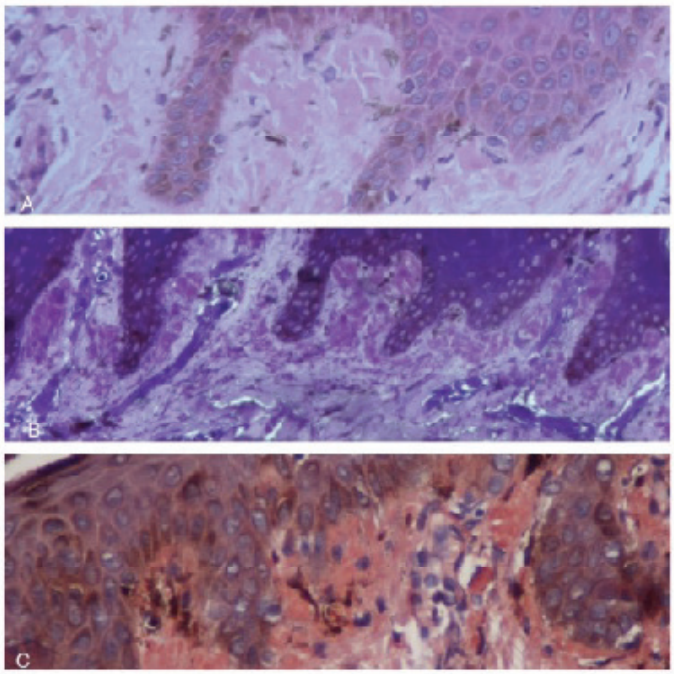

Figure 3. *Histopathology showing amyloid deposition. A) Amorphous amyloid deposits in papillary dermis (H&E, 40x), B) methyl violet stain, 40x, C) congo red stain, 40x.*

tests, and radiological investigations were normal. Urine testing for Bence-Jones proteins was negative and serum electrophoresis was normal.

Histopathological examination obtained from hyperpigmented and hypopigmented macules and hyperpigmented plaques over leg showed hyperkeratosis, hypergranulosis, widening of papillae, and amorphous amyloid deposits in the papillary dermis, confirmed by methyl violet and congo red staining (**Figure 3**). Tongue biopsy revealed melanophages in focal areas without any amyloid deposit.

Case Discussion

Amyloidosis cutis dyschromica was first defined by Morishima in 1970 and is characterized by generalized mottled hyper- and hypo-pigmentation, little or no itching, pre-pubertal onset, and focal amyloid deposits below the epidermis [1]. Clinically our patient had a unique form of hyperpigmentation pattern, predominantly reticulate with diffuse, mottled and rippled pigmentation over various parts of the body. Hypopigmented macules on a background of hyperpigmentation were seen over limited areas (palms, soles, legs, palate). Few areas over the neck and lower legs showed atrophy. Although there were features of amyloidosis cutis dyschromica, many unusual features, as mentioned above, along with mucosal and nail involvement

Table 1. *Clinical features of our patient versus the other diagnoses.*

Features	Our patient	ACD	PCA syndrome	Ordinary PCA	NFJS	DPR
Onset	Pre pubertal	Pre pubertal	Early	Adult	Early	Early
Symptoms of itching	-	Absent/ mild	May or may not	May or may not	-	-
Disappearance around puberty	-	-	-	-	+	-
Reticulate pigmentation	+	+	+	+	+	+
Mottled pigmentation	+	+	+	+	-	-
Diffuse pigmentation	+	+	+	+	-	-
Poikilodermatous skin	-	-	+	+/-	-	-
Lichenoid papules	-	+/-	+/-	+/-	-	-
Photosensitivity	-	-	+	-	-	-
Hypohydrosis	-	-	-	-	+	+
Palmo-plantar keratoderma	-	-	+	-	+	+
Loss of dermatoglyphics	-	-	-	-	+	+
Nail dystrophy	+ few	-	-	-	+/-	+
Oral involvement	+	-	-	-	-	-
Alopecia / thinning of hair	+	-	-	-	-	+
Enamel/teeth defects	-	-	-	-	+	-
Amyloid deposits	+	+	+	-	Case reports	-

were present.

Poikiloderma-like cutaneous amyloidosis was first described in 1929 and it comprises two clinical forms; the ordinary type and the poikiloderma-like cutaneous amyloidosis syndrome [1, 6]. The former is characterized by adult onset, presence of poikilodermatous lesions, and lichenoid papules, with or without blisters. The latter has an early onset, photosensitivity, short stature, and occasionally palmoplantar keratosis in addition to the above findings [6]. Classically, our case does not fit into any of the above types but had a few features (diffuse and reticulate pigmentation with a few atrophic macules) of the ordinary type of poikiloderma-like cutaneous amyloidosis without any lichenoid papules, telangiectasias, or blisters. Most reported cases of poikiloderma-like cutaneous amyloidosis, had only some components of poikiloderma rather than the classical form of poikiloderma showing mottled pigmentation, telangiectesia, and atrophy [3]. Additionally lichenoid papules and blisters have also been reported in these cases [1, 3, 9]. Cases of amyloidosis cutis dyscromica with isolated atrophy/telangiectasia/diffuse poikiloderma-like pigmentation as well as amyloidosis cutis dyscromica with poikiloderma-overlap have been reported in the literature [8]. Overlapping features thus exist between the above two entities.

The presence of unusual features of nail, tongue, and palatal pigmentation with palm and sole involvement, which are not seen in any form of primary localized cutaneous amyloidosis, led us to consider the possibility of genodermatosis associated with amyloidosis-like X linked reticulate pigmentary disorder, dyskeratosis congenita, and Naegeli-Franceschetti-Jadassohn syndrome and it's closely related allelic disorder, dermatopathia pigmentosa reticularis [10]. However, the absence of systemic involvement, photophobia, and corneal dystrophy ruled out X-linked reticulate pigmentary disorder.

Although a few nails were dystrophic, lack of the classical leukoplakia and peripheral pancytopenia in our patient ruled-out dyskeratosis congenita.

Naegeli-Franceschetti-Jadassohn syndrome and dermatopathia pigmentosa reticularis are rare autosomal dominant forms of ectodermal dysplasia, which share similar features of reticulate pigmentation, hypohydrosis, palmo-plantar keratoderma, nail dystrophy, and loss of dermatoglyphics [7]. Persistence of pigmentation and enamel defects with or without nail dystrophy differentiates Naegeli-Franceschetti-Jadassohn syndrome from dermatopathia pigmentosa reticularis. Our patient had some clinical overlap with dermatopathia pigmentosa reticularis (persistence of pigmentation, thinning of hair, absence of enamel defects). However absence of hypohydrosis, palmo-plantar keratoderma, and presence of normal dermatoglyphics, mottled pigmentation, with oral involvement raised doubts for both the possibilities. There have been isolated case reports of amyloid deposits in Naegeli-Franceschetti-Jadassohn syndrome but not in dermatopathia pigmentosa reticularis [7]. It is possible that an active search for deposition of amyloid has not been made yet in the latter. **Table 1** shows clinical features of our patients versus other conditions in the differential diagnosis.

There is no single effective treatment of primary localized cutaneous amyloidosis. Various modalities include topical and intralesional corticosteroid, topical dimethylsulfoxide, calcineurin inhibitors, acitretin, cyclophosphamide, phototherapy, dermabrasion, hydrocolloid dressings, and pulsed-dye laser therapy.

Conclusion

We labeled our patient as an atypical presentation of primary localized cutaneous amyloidosis with some overlapping features of amyloidosis cutis dyschromica and poikiloderma-like cutaneous amyloidosis (ordinary type). There is a paucity of case reports in the literature regarding such atypical presentations of primary localized cutaneous amyloidosis. Therefore, the full spectrum of manifestations and associations still remain unknown. We suggest that a search for amyloid should be made in patients presenting with such hyperpigmentation, irrespective of mucosal or nail involvement.

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