Pinch Purpura in Adult Colloid Milium—A Case Report

Abstract

Colloid milium is a rare cutaneous deposition disorder characterized by the presence of asymptomatic multiple dome-shaped semi-translucent waxy yellowish or skin-colored papules. It is commonly seen on the face and dorsum of forearms and arms due to chronic sun exposure. Nodular amyloidosis and primary systemic amyloidosis mimic adult colloid milium more closely. They share indistinguishable common features clinically and histologically. Purpura following trivial injury is a cardinal feature of primary systemic amyloidosis. Here, we are reporting a case of adult colloid milium, presented with waxy papules and purpura involving the dorsa of the lower half of the forearms and hands which is confirmed by histopathological and immunohistochemical studies.

Keywords: *Colloid, pinch purpura, primary systemic amyloidosis*

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Introduction

Colloid milium is a rare cutaneous deposition disorder characterized by the presence of asymptomatic multiple dome-shaped semi-translucent waxy yellowish or skin-colored papules ranging in size from 1 to 4 mm.[1,2] The underlying skin may be thickened and may show furrows. It manifests over the face and dorsum of forearms and arms due to chronic sun exposure. It has been classified into four different types namely, 1) juvenile type originating from degenerating keratinocytes, 2) adult type from degenerating elastic fibers, 3) pigmented type due to toxic effects of petroleum products and hydroquinone, and 4) nodular colloid occurring in old age. Here we report a rare case of adult colloid milium with purpura as an unusual presentation.

Case Report

A 35-year-old fair complexioned male was examined in a skin outpatient department for asymptomatic non-progressive symmetrical skin lesions over the forearm and hands for an eight-year duration. A history of trauma-induced purpura was present over lesion sites. There were no systemic complaints and no family history of similar illnesses. The patient is a financier by occupation with a moderate degree of exposure to sunlight. Topical application with sunscreens and emollients showing no improvement.

Dermatological examination revealed bilateral symmetrical numerous skin-colored to yellowish waxy papules involving the dorsa of the lower half of the forearms and hands [Figure 1]. Purpura was observed over the waxy papules and could be induced selectively over the lesion areas by stroking [Figure 1]. Face, mucosa, and tongue were normal. Systemic examinations were normal. Basic investigations, complete hemograms, coagulation profiles, serum proteins, and immunoglobulin assays were normal. X-ray of the chest and ultrasound abdomen was also normal.

Biopsy from the waxy purpuric papules under hematoxylin and eosin showed a homogenous globular eosinophilic mass with cleft-like spaces in the papillary dermis. A grenz zone separated the thinned-out epidermis from the homogenous mass [Figure 2]. Fibroblasts, numerous red blood corpuscles, and damaged blood vessels were also appreciable within and adjacent to the mass [Figure 2]. The deeper dermis and subcutis were normal. Special staining with Congo red was negative and Verhoff-von Gieson (VVG) staining revealed strong black degenerated elastic fibers (solar elastosis) beneath the mass and upper

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dermis [Figure 3]. Immunohistochemical study with cytokeratin markers was negative for the homogenous mass thereby excluding conditions with keratinocyte origin namely primary cutaneous amyloidosis and juvenile colloid milium [Figure 4]. A diagnosis of adult-type colloid milium was made based on the above clinicopathological findings.

Discussion

Although many conditions are to be considered differential diagnoses, only amyloidosis, especially nodular and primary systemic amyloidosis, mimics adult colloid milium more closely.[3] They share indistinguishable common features namely waxy translucent papules, clinically and homogenous eosinophilic fissured mass, histologically.

Purpura following a trivial injury like stroking or pinching is considered one of the cardinal signs in primary systemic amyloidosis and the manifestation of purpura in the lesion sites in this patient made clinical differentiation from primary systemic amyloidosis more difficult. Special stains were done to differentiate the two conditions. A negative result with Congo red excluded amyloidosis

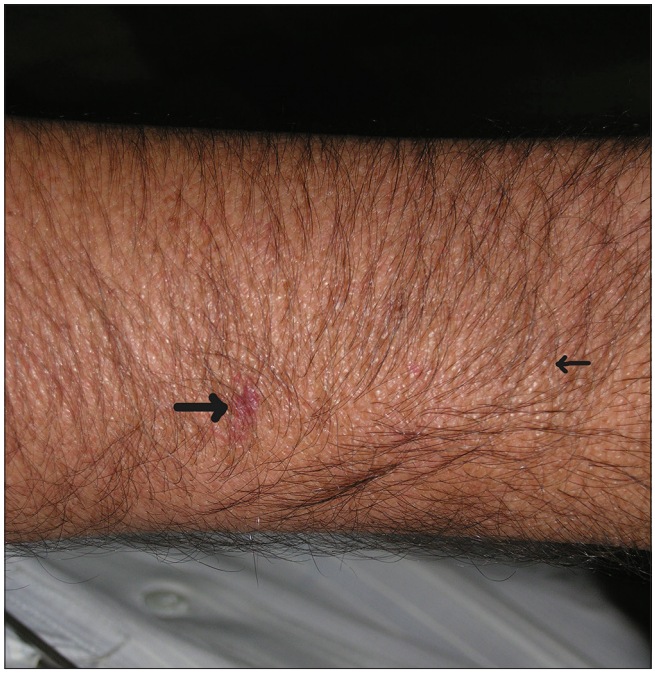

Figure 1: Clinical picture showing yellowish translucent waxy papules with purpura on the dorsum of the forearm

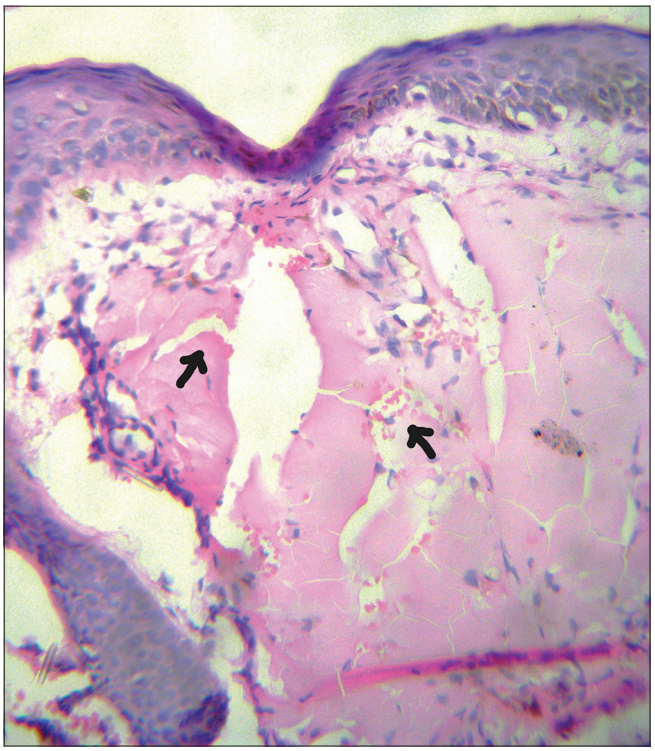

Figure 2: H and E section of the waxy purpuric papule showing homogenous eosinophilic mass with cleft-like spaces, fibroblasts, and red blood corpuscles. (10 × 20)

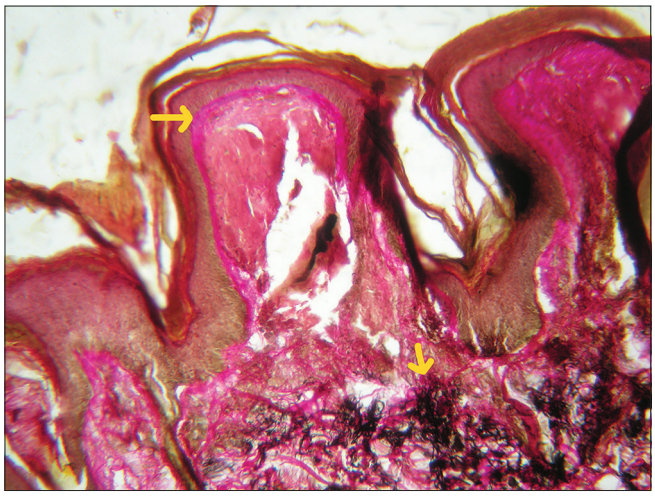

Figure 3: Verhoeff-van Gieson stain showing strong staining of degenerated elastic fibers (black) and a prominent grenz zone. (10 × 20)

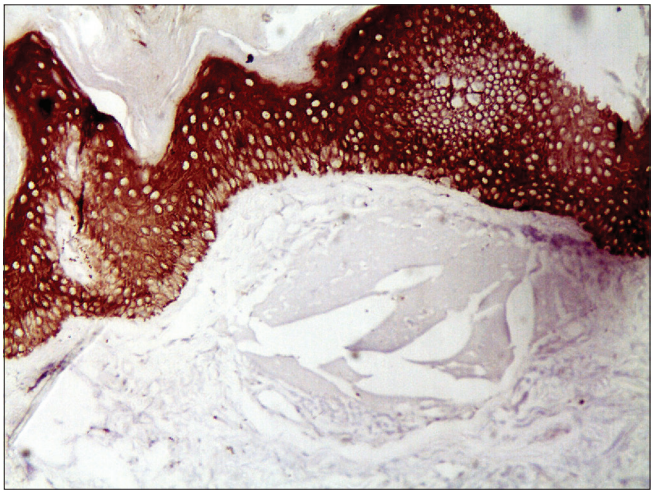

Figure 4: immunostain with cytokeratin markers: homogenous-fissured mass remains unstained while the epidermis shows positive staining. (10 × 20)

of both cutaneous and systemic origin. A strong staining of degenerating elastic fibers in the upper dermis beneath the mass and upper dermis with VVG stain confirmed a diagnosis of adult colloid milium. According to Lewis *et al.*,[4] colloid has no fool proof distinctive staining characteristic of its own, thus, diagnosing colloid is mainly accomplished by negative results with amyloid stains. Further, colloid has been reported to show positive staining with crystal violet and Congo red and give fluorescence with thioflavin T on frozen rather than in paraffin sections.[1]

Purpura as a component of colloid milium has very few references in literature and the interesting report by Sevigny *et al.*,[5] stroke-induced purpura was documented in three cases among which two had juvenile colloid milium and one had adult colloid milium. Purpura was attributed to the ultramicroscopic infiltration of colloid material in the dermal blood vessels with a resultant decrease in the elasticity of the blood vessels. It was compared to a similar deposition of amyloid in the vessel wall in primary systemic amyloidosis. The presence of red blood corpuscles in the damaged vessel in the vicinity of the eosinophilic mass was histologically supporting clinical purpura but colloid deposits in the vessel wall were not detected which probably requires ultramicroscopic studies.

The demonstration of amyloid P, an essential component of elastic fibers under immunohistochemistry, and distinguishing delicate short wavy branching filaments of diameters 1.5–2.0 nm compared to 6–10 nm of amyloid under electron microscopy are other higher studies that differentiate adult colloid milium from primary systemic amyloidosis.[6] Colloid milium does not contain laminin or type IV collagen unlike amyloidosis or lipoid proteinosis.[1]

Successful treatment has been reported with dermabrasion and more recently with ablative and fractional laser resurfacing of affected skin.[7] The treatment of this patient with topical sunscreens and microdermabrasion showed no promising results and fractional laser surfacing in the future might prove helpful.

Conclusion

This case of adult colloid milium is documented for its rarity and its similarities to skin lesions of primary systemic amyloidosis both clinically and histologically. Purpura, a less-described feature in adult colloid milium, is also highlighted. The importance of special staining and immunostaining with cytokeratin markers is emphasized in distinguishing adult colloid milium from other types of colloid milium as well as from amyloidosis.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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