

The Association of Rheumatoid Arthritis with Lichen Amyloidosis: Case Report

Romatoid Artrit ve Liken Amiloidozis Birlikteliği

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Geliş Tarihi/Received: 17.03.2014

Kabul Tarihi/Accepted: 13.10.2014

This case report was presented as a poster at 23rd National Physical Medicine and Rehabilitation Congress, 11-15 May 2011, Manavgat/Antalya, Turkey.

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ABSTRACT Rheumatoid arthritis is a systemic inflammatory disorder which primarily involves the joint synovial membrane. The skin is the most commonly affected extra-articular site. The cutaneous changes may be nonspecific (skin atrophy, palmar erythema, bluish discoloration of fingertips, splinter hemorrhages, nail changes) or specific (rheumatoid nodules, rheumatoid vasculitis, felty syndrome, pyoderma gangrenosum, interstitial granulomatous dermatitis with arthritis, palisaded neutrophilic and granulomatous dermatitis, rheumatoid neutrophilic dermatitis). However, among the rheumatoid arthritis related skin disorders, cutaneous localized or generalized amyloidosis had not been reported in the literature before. Herein, a case of rheumatoid arthritis associated with lichen amyloidosis is presented.

Key Words: Arthritis, rheumatoid; amyloidosis; lichenoid eruptions

ÖZET Romatoid artrit, primer olarak eklem sinovyal membranını tutan sistemik inflamatuvar bir hastalıktır. Deri, en sık etkilenen ekstra-artiküler alandır. Kutanöz değişiklikler nonspesifik (deri atrofisi, palmar eritem, parmak uçlarının mavimsi diskolorasyonu, splinter hemoraji, tırnak değişiklikleri) veya spesifik (romatoid nodüller, romatoid vaskülit, felty sendromu, piyoderma gangrenozum, artrit ile ilişkili deri hastalıkları arasında kutanöz lokalize veya jeneralize amiloidozis bildirilmiştir. Burada, romatoid artrit ile birliktelik gösteren bir liken amiloidozis olgusu sunulmuştur.

Anahtar Kelimeler: Artrit, romatoid; amiloidoz; likenoid döküntüler

Türkiye Klinikleri J Case Rep 2015;23(4):376-9

Rheumatoid arthritis (RA) is a chronic inflammatory systemic disorder which primarily involves the joint synovial membrane.¹⁻³ However, it can also present with extra-articular manifestations which may occur in almost every organ system, and the skin is the most commonly affected site.^{1,3}

The cutaneous changes in RA may be nonspecific like skin atrophy, fragility, or easy bruisability, palmar erythema, bluish discoloration over the fingertips, splinter hemorrhages, and nail changes including longitudinal ridging, onychorrhexis, and clubbing.¹ Also a wide array of specific lesions, such as rheumatoid nodules, rheumatoid vasculitis, felty syndrome, pyoderma gangrenosum, interstitial granulomatous dermatitis with arthri-

doi: 10.5336/caserep.2014-39822

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tis, palisaded neutrophilic and granulomatous dermatitis, and rheumatoid neutrophilic dermatitis can occur.¹⁻³ Among the RA related cutaneous manifestations, localized or generalized amyloidosis had not been reported in the literature before. Herein, we present a case of RA associated with lichen amyloidosis (LA).

CASE REPORT

An informed consent was obtained from the patient presented here.

A 28-year-old woman presented to Physical Medicine and Rehabilitation Clinic with a 3-month history of swelling and pain of small joints of the hands. She had a history of morning stiffness lasting 3-4 hours. She did not complain of associated alopecia, photosensitivity, oral aphthous ulcers, purpura, petechiae, hyperhidrosis, sputum production, cough, dispnea, headache, sleepiness, fever, and chills. On physical examination, swelling and tenderness involving bilaterally the wrist, metacarpophalangeal, and proximal phalangeal joints was noted. Additionally some skin lesions were observed over the small hand joints, elbows, knees,

and ankles. Laboratory examination showed an increase in C-reactive protein (6,05 mg/dL) and erythrocyte sedimentation rate (120 mm/hour). The results of other tests including complete blood count, liver and kidney function tests, measurement of serum levels of electrolytes were all within normal limits. Rheumatoid factor and antinuclear antibody was negative. The patient was given the diagnosis of RA according to the 2010 American College of Rheumatology/European League Against Rheumatism classification criteria, and treatment with nonsteroidal anti-inflammatory drugs and methyl prednisolone (16 mg/day) was initiated.⁴

The patient was referred to our Dermatology Department for the evaluation of skin lesions. She noticed those mildly pruritic lesions 6 months ago and did not describe any prior history of chronic irritation, scratching or underlying skin disease at those sites. Dermatological examination revealed hyperpigmented and hyperkeratotic scaly plaques on both elbows, knees, ankles, and metacarpophalangeal, and proximal phalangeal joints (Figure 1). A 4 mm punch biopsy specimen was obtained from

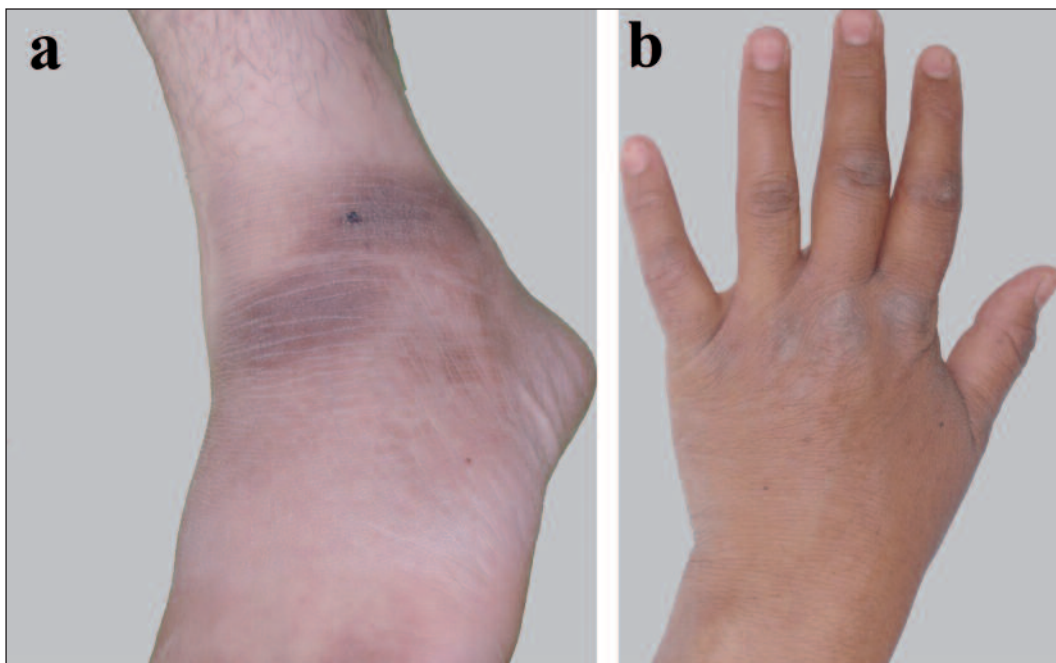


FIGURE 1: Hyperpigmented and hyperkeratotic scaly plaques (a) On the left ankle (b) On the metacarpophalangeal, and proximal phalangeal joints.

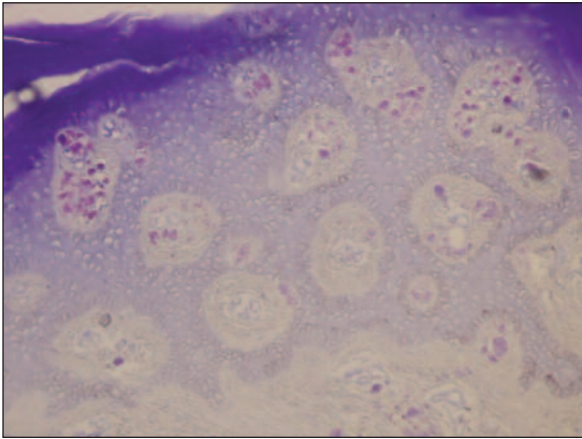


FIGURE 2: Small, hyaline deposits of amyloid in the papillary dermis (crystal violet staining, original magnification x400).

the lesion on the left ankle. Histopathologic examination disclosed hyperkeratosis, mild acanthosis, and deposition of hyalinized amorphous material within the papillary dermis (Figure 2). In light of those findings, a diagnosis of LA was made and she was started on topical 10% salicylic acid and clobetasol 17-propionate ointment. As LA can be associated with multiple endocrine neoplasia type 2 (MEN-2), the patient was reevaluated. Her medical history for fever, tachycardia, and high blood pressure was unremarkable. The results of thyroid function tests, serum alkaline phosphatase, calcium, phosphorus, calcitonin, and parathyroid hormone levels were within normal limits. Additionally, abdominal computed tomography and thyroid ultrasonography showed no abnormal findings.

In two-week follow-up, the symptoms of arthritis subsided and the methyl prednisolone dose was tapered gradually. The patient was discharged from the hospital with nonsteroidal anti-inflammatory drugs and methyl prednisolone (4 mg/day), however, she was lost to follow-up.

DISCUSSION

Despite its predominant osteoarticular and periarticular manifestations, RA is a systemic disease often associated with cutaneous and organ-specific extra-articular findings.³ Survival is consistently lower than that of the general population and is

based mainly on the presence of extra-articular manifestations.^{1,5} As the skin is the most common extra-articular target of RA, understanding the cutaneous expressions of RA may lead to early diagnosis, prompt treatment, and lower morbidity and mortality for the affected persons.^{1,3} On the other hand, the spectrum of skin manifestations is expanding over time making it more difficult to use them as a cue to the underlying diagnosis of RA. Indeed, in addition to the well-known specific and nonspecific cutaneous lesions, patients with RA had also been reported to exhibit a wide range of rare conditions such as dermatophytosis, erythema nodosum, alopecia, vitiligo, contact dermatitis, urticaria, tylosis, and clavus.^{2,6,7}

Lichen amyloidosis is a type of primary localized cutaneous amyloidosis in which amyloid, a fibrillar proteinaceous material, is deposited solely in the skin, without associated systemic involvement.^{8,9} It is characterized by multiple pruritic discrete hyperkeratotic papules that coalesce into plaques, most commonly located on the anterior legs, upper back, forearms, and thighs.⁸⁻¹⁰ Although the precise cause of LA is uncertain, chronic irritation to the skin resulting in excessive production of degenerate keratins, and their subsequent conversion into amyloid deposits, has been proposed to be an etiologic factor.^{11,12} It is stated that any damage to keratinocyte, beyond the ability of the phagocytic cell to remove the abnormal keratins, can be able to cause amyloid deposits.¹¹ As LA is typically highly pruritic, the chronic irritation to the skin has generally been considered to be secondary to scratching induced by other subjacent pruritogenic processes.^{8,9} Yet, as it was the case in our patient, mildly or non-pruritic cases have also been described.^{9,13} In such patients other factors, for instance a locus located on the short arm of chromosome 1, has been suggested to be involved in the pathogenesis.^{9,14}

The diagnosis of LA depends on the clinical and histopathological findings.⁸⁻¹¹ Lesional skin biopsy generally reveals hyperkeratosis, acanthosis, and focal amyloid deposits within the papillary dermis.⁸⁻¹⁰ In our patient, although the clinical presentation with hyperpigmented and hyperker-

atopic scaly plaques was not so typical for LA, the histopathological examination provided the definitive diagnosis.

Lichen amyloidosis has been reported in association with diverse diseases, namely MEN 2A, atopic dermatitis, mycosis fungoides, systemic lupus erythematosus, and lichen planus before.^{10,11,15} However, as distinct from those conditions, the patient described here manifested both LA and RA. We speculate that, in the present case

theoretically, deregulated immune response leading to progressive synovial inflammation and joint destruction in RA may also allow the degeneration of keratinocytes to be processed into amyloid filaments later. Therefore, to our knowledge, although this association might be merely coincidental, LA may also represent a newly described nonspecific cutaneous finding of RA. The identification of new cases would be of interest to clarify any relationship between the two diseases.

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