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PRP-Induced Lichen Scleroatrophicus

Defne Özkoca, Tuğba Kevser Üstünbaş Uzunçakmak, Zekayi Kutlubay

Department of Dermatology, İstanbul University-Cerrahpaşa, Cerrahpaşa School of Medicine, İstanbul, Turkey

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Abstract

Lichen scleroatrophicus is a chronic inflammatory skin disease that is usually observed in the female external genital tract. Ivory-white atrophic plaques are the hallmark of the disease. Here, we present a case of extragenital lichen scleroatrophicus in a patient with a history of multiple PRP treatments for knee osteoarthritis. There are no reported cases of lichen scleroatrophicus due to platelet-rich plasma therapy in the literature. Indeed, platelet-rich plasma has been used in the treatment of genital lichenscleroatrophicus.

Keywords: Autoimmune, lichen, PRP, scleroatrophicus

Here we present a case of extragenital lichen scleroatrophicus in a patient with a history of multiple platelet-rich plasma (PRP) treatments for knee osteoarthritis. There are no reported cases of lichen scleroatrophicus due to platelet-rich plasma (PRP) therapy in the literature. Indeed, PRP has been used in the treatment of genital lichenscleroatrophicus.[1]

Case Presentation

A 53-year-old female patient presented to the outpatient clinic with whitening in the shoulders, the breasts, and the abdomen. The lesions first appeared around the abdomen 8 months ago after she has received PRP therapy for knee osteoarthritis and then disseminated to the shoulders and the breasts. The patient has previously received 2 sessions of PRP in the same year and multiple sessions of PRP during the years 2016 and 2019. On dermatological examination, there were grouped as ivory-white atrophic plaques with irregular but distinct erythematous borders on the abdomen, breasts, and shoulders (Figure 1). The wood light did not cause any enhancement of the white color. Besides osteoarthiritis, the patient also has type 2 diabetes mellitus and hypertension and was using perindopril plus indapamide 5 mg and metformin 100 mg on a regular basis. She had no other skin diseases and her family history was unremarkable. Her routines that were performed 1 month ago in the internal medicine clinic were normal.

A 4 mm punch biopsy was taken from the abdominal plaque with the possible diagnosis of extragenital lichen scleroatrophicus. The biopsy revealed orthoparakeratosis, mild spongiosis in the epidermis, effacement of rete ridges, mild vacuolar degeneration in the dermo-epidermal junction, homogenous hyalinized eosinophilic collagen fibers in the dermiş, and perivascular inflammatory infiltrate of lymphocytes and histiocytes (Figure 2). The periodic acid-Schiff stain was negative. The biopsy established the diagnosis of lichen scleroatrophicus.

Figure 1. Atrophic, ivory-white plaque of lichen scleroatrophicus.

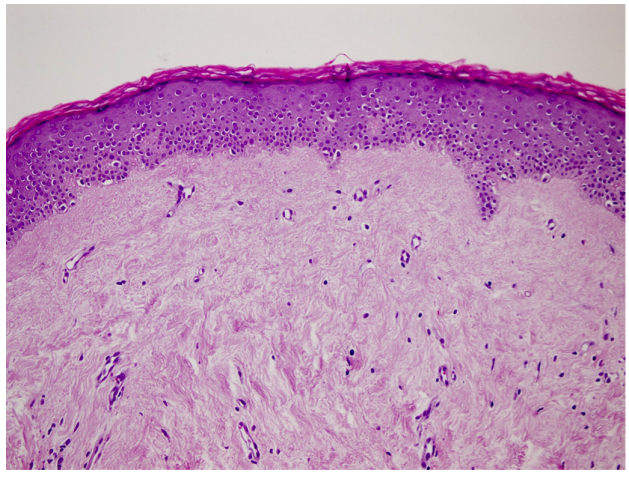

Figure 2. Biopsy specimen of the patient.

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Corresponding author: Defne Özkoca, Department of Dermatology, İstanbul University-Cerrahpaşa, Cerrahpaşa School of Medicine, İstanbul, Turkey
e-mail: defneozkoca@yahoo.com
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Upon the definitive diagnosis of lichen scleroatrophicus, topical clobetasol propionate ointment 2 times daily was initiated.

Discussion

Lichen scleroatrophicus is a chronic inflammatory skin disease that is usually observed in the female external genital tract. Ivory-white atrophic plaques are the hallmark of the disease. Extragenital disease is seen in 15%-20% of the patients, and the most common locations are medial thighs, inframammary area, shoulders, neck, and wrists.[2] The autoreactive T-cells have a role in the pathogenesis of the disease, and the sera of the patients show increased levels of T-helper-1 cytokines along with increased T-cell infiltrates in the lesions.[3] The most commonly used treatment modalities for extragenital lichen scleroatrophicus are phototherapy (UVA-1 therapy) (5 sessions/week, 10 weeks), potent topical corticosteroids, topical tacrolimus (0.1%), systemic corticosteroids, or systemic methotrexate.[4]

PRP is a therapy in which the growth factors within the patient's thrombocytes are separated via centrifugation and then injected into the lesion/pathologic part of the body. PRP treatment is used for chronic wounds; muscle, cartilage, and ligament injuries; for androgenetic alopecia; and for anti-aging purposes, because it enhances wound healing and rejuvenation. The growth factors that are released from the thrombocytes are PDGF, TGF-beta, VEGF, EGF, bFGF, and IGF-1. TGF-beta increases the production of type 1 and type 3 collagen and inhibits the collagen break-down. PRP should be avoided in patients with autoimmune diseases because it has a propensity to induce these diseases.[5]

Autoimmunity has a role in the pathogenesis of lichen scleroatrophicus, in which there is an increase in collagen density. Given that TGF-beta increases the collagen density and PRP can induce autoimmune diseases, the lesions of lichen scleroatrophicus in this patient were related to the previous multiple PRP treatments that she has received for knee osteoarthritis. There are no similar cases reported in the literature. Yet, there are cases of genital lichen scleroatrophicus treated with PRP successfully, which is explained by PRP's capacity of increasing tissue rejuvenation.[1]

Lichen scleroatrophicus is an autoimmune skin disease with increased collagen density. PRP is known to induce autoimmunity due to the growth factors within it. Furthermore, TGF-beta, which is released from the thrombocytes, is a strong inducer of neocollagenogenesis. Thus, PRP treatment has induced lichen scleroatrophicus in a patient who has received multiple sessions.

Informed Consent: Written informed consent was obtained from patient who participated in this study.

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Declaration of Interests: The authors have no conflicts of interest to declare.

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