Discoid Lupus Erythematosus at the Site of Healed Herpes zoster: Wolf's Isotopic Response: Case Report

Herpes Zoster Sonrası İyileşen Bölgede Ortaya Çıkan Diskoid Lupus Eritematozus: Wolf'un İzotopik Yanıtı

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ABSTRACT The term Wolf's isotopic response refers to the appearance of a new skin disease at the site of an already healed, unrelated disease. In most cases, the initial disease is herpes zoster. Different diseases may subsequently develop on the same site. The most common isotopic responses are granulomatous and lichenoid reactions, Discoid lupus erythematosus (DLE) is the most common form of cutaneous lupus erythematosus. It is a chronic inflammatory skin disease that typically manifests as erythematous, indurated, scaly plaques that have the potential to cause permanent scarring and dyspigmentation. In May 2013, the patient presented papular and vesicular eruption that appeared at first on her right face, scalp skin and spreaded to the right arm. The patient was diagnosed as herpes zoster. After two months, she developed atrophic, scaly, erythematous papules and plaques confined to the same sites and referred to our outpatient clinic. Here we report this 62-year-old-female patient with DLE due to Wolf's isotopic response.

Key Words: Herpes zoster; lupus erythematosus, discoid; dermatitis

ÖZET Wolf'un izotonik yanıtı; iyileşmiş bir deri hastalığının tam yerinde sonradan meydana gelen, önceki hastalık ile ilişkisi olmayan, yeni bir deri hastalığının ortaya çıkmasıdır. Birçok vakada ilk hastalık herpes zosterdir. Farklı hastalıklar aynı bölgede gelişebilmektedir. En sık rastlanan izotopik yanıtlar; granülomatöz ve likenoid reaksiyonlardır. Diskoid lupus eritematozus (DLE), kutane lupuslar içinde en sık olanıdır. Potansiyel olarak kalıcı skar ve renk değişimine neden olabilen ve tipik olarak eritemli, endüre ve skuamlı plaklar ile ortaya çıkan kronik inflamatuvar bir hastalıktır. Hastamızda sağ yüz ve saçlı deriden başlayıp sağ kola yayılan papül ve veziküller Mayıs 2013'te meydana gelmiş olup, hastaya herpes zoster tanısı kondu. 2 ay sonra, aynı bölgelerde atrofik, skuamlı, eritemli papül ve plakların ortaya çıkması üzerine polikliniğimize başvurdu. Burada, Wolf'un izotopik yanıtına bağlı olarak meydana gelen DLE tanılı 62 yaşındaki hastayı rapor etmekteyiz.

Anahtar Kelimeler: Herpes zoster; lupus eritematozus, diskoid; dermatit

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Several types of cutaneous lesions have been described to develop within resolved cutaneous herpes zoster lesions. Different diseases may subsequently develop on the same site. And they include granuloma annulare, granulomatous dermatitis, comedones, xanthoma,acneiform eruption, pseudolymphoma, psoriasis, lichen planus, lichen simplex chronicus, eosinophilic dermatosis, cutaneous malignancy, etc. As far we know this is the first case report of a isotopic reaction with de-novo chronic discoid lupus erythematosus (DLE) at the site of a previously healed herpes zoster infection.

CASE REPORT

In May 2013, a 62-year-old female was admitted with a 1-week history of slightly itchy papular and vesicular eruption that appeared at first on her right face, scalp skin and spreaded to the right arm. The patient was diagnosed as herpes zoster and treated successfully with oral valacyclovir without scar formation. Two months later, she developed skin lesions confined to the same sites of herpes zoster and referred to our outpatient clinic.

On physical examination, atrophic, scaly, erythematous papules and plaques were noted (Figure 1, 2). There was no other systemic, cutaneous or mucosal abnormality. In laboratory investigations, antinuclear antibody (ANA) levels were high (1:3200). However complete blood cell count, erythrocyte sedimentation rate, creatinine, urine analysis, anti-dsDNA, antiribonucleoprotein, anti-SM, anti-RO and anti-LA levels were within normal limits. A skin biopsy was taken from her scalp skin. Histological examination revealed epidermal atrophy, follicular plugging, lichenoid infiltration, vacuolar degeneration of the basal layer, exocytosis, apoptotic body, band-like lympho-histiocytic infiltrate in papillary dermis (Figure 3, 4). These

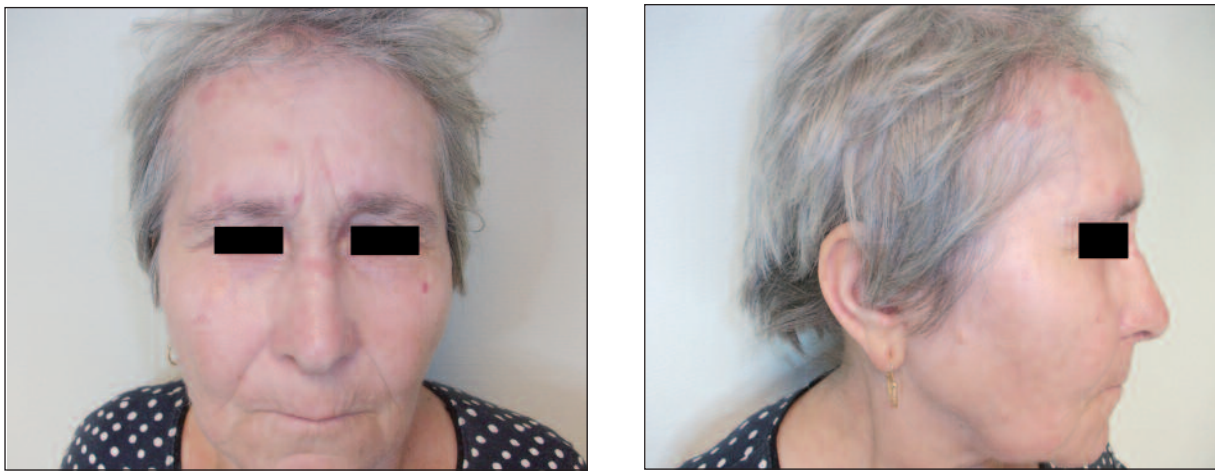

FIGURE 1-2: Wolf isotopic reaction: atrophic, scaly plaques of DLE on the site of an healed herpes zoster on the face.
(See color figure at http://www.turkiyeklinikleri.com/journal/dermatoloji-dergisi/1300-0330/)

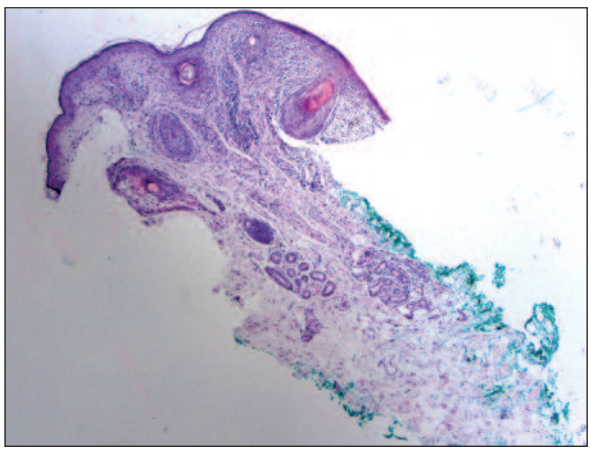

FIGURE 3: Follicular plugging, epidermal atrophy and lichenoid infiltration (HE, x40).
(See color figure at http://www.turkiyeklinikleri.com/journal/dermatoloji-dergisi/1300-0330/)

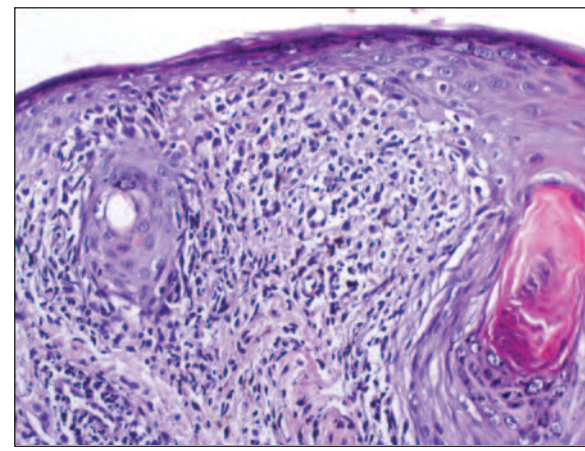

FIGURE 4: Vacuolar degeneration of the basal layer, exocytosis, apoptotic body, band-like lympho histiocytic infiltrate in papillary dermis (HE, x200).
(See color figure at http://www.turkiyeklinikleri.com/journal/dermatoloji-dergisi/1300-0330/)

findings were consistent with DLE. Direct immunofluorescence (DIF) was negative.

DISCUSSION

Wolf's isotopic response is a rare dermatologic phenomenon defined as the occurence of a new, unrelated disease at the site of healed lesions of some other diseases.[1] Several different disorders have been described at the site of herpes zoster healed with or without scar formation. These diseases include fungal, granulomatous reactions, lichen planus, rosacea, and malignancies etc.[2] As far we know this is the first case report of post-herpetic de novo DLE in the literature.

DLE is the most common form of cutaneous lupus erythematosus. It is a chronic disfiguring inflammatory skin disease that typically manifests as erythematous, indurated, scaly plaques that have the potential to cause permanent scarring and dyspigmentation.[3] Unilateral distribution of cutaneous lupus erythematosus is rare. Some reported cases of cutaneous lupus erythematosus showed unilateral linear distribution following the lines of Blashko.[4]

According to our knowledge, there is only one case report of cutaneous lupus erythematosus in the setting of healed herpes zoster virus infection. Nicole et al. reported a patient with a preceding diagnosis of SLE with subsequent eruption of a new cutaneous lupus rash within the site of her prior herpes zoster lesion. But they couldn't decide whether new lesions developed due to Wolf response and added that some overlap between Koebner and Wolf responses may exist.[5] Ko et al. reported a patient presented DLE lesions which confined to his right face after abrasion wound history in an accident.[6] Although cutaneous lupus has not been reported to have exhibited Wolf's response after a herpes zoster infection, there has been report of a isotopic reaction with DLE at the site of a previously healed cutaneous leishmaniasis lesion.[7]

Some neural alteration might be the first step, with subsequent impairment of immunologic function and that viral and vascular mechanisms may be only cofactors in certain cases.[8] Various neuropeptides have been documented to reflect the immune system and cytokines with neuroendocrine-like activity can influence the peripheral nerves.[9] Therefore, theoretically the damage to the nerve fibres by herpes zoster infection may trigger the release of neuropeptides, which result in activation of the immune system.[10]

According to this theory, inflammatory conditions such as DLE may occur at the healed site of herpes zoster. Cell damage caused by the herpes virus does not tend to be observed in histological studies of the second disease. However cases have been described in which viral DNA has been detected using PCR tehniques, and in which glycoproteins of the herpes zoster viral envelope have been detected using in situ hybridization.[11]

The unique distribution of skin lesions remains intriguing and sometimes unexplained. As we showed in our case a healed herpes zoster site might trigger inflammatory conditions such as unilateral DLE. Further investigations are needed to be done to understand the pathogenesis of Wolf's isotopic response.

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