Dermatomal and Solitary Plaque-type Psoriasis: Report of Two Unusual Cases

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Abstract

Psoriasis is a chronic inflammatory skin disease with unknown etiology and a wide spectrum of clinical presentations. We report the first case of dermatomal psoriasis in a 62-year-old patient in addition to an unusual presentation of psoriasis as a solitary plaque on the ear of a 38-year-old patient.

Introduction

Psoriasis is a chronic inflammatory disease caused by hyperproliferation of the keratinocytes in the epidermis [1]. The pathophysiology of psoriasis still remains uncertain; however, it appears to be influenced by genetic and immune-mediated components [2]. This is supported by the successful treatment of psoriasis by immune mediating medications and the increase in the number of activated T-cells in the dermis that are capable of inducing proliferation of the keratinocytes [3-5]. Previous studies have discovered an association between specific HLA antigens and gene deletions with the susceptibility to psoriasis in different populations [6]. There are various types of psoriasis including plaque-type psoriasis, guttate psoriasis, pustular psoriasis, linear psoriasis and more [7]. Here, we report the first case of dermatomal psoriasis and a case of unusual plaque psoriasis in two different patients.

Case Report:

Case 1:

A 62-year-old woman presented to our dermatology clinic with a 4-year history of psoriasis. She was under topical treatment with corticosteroids and calcipotriene and most of her lesions had responded properly to the topical treatment resulting in significant recovery of psoriatic lesions. Although the patient complained of the lesion on her right lower extremity that had not responded to the treatment. She denied using any systemic medications. On physical examination, erythematous, scaly, indurated and mildly pruritic papules and plaques were noted on her right thigh and buttock that overlapped with L2 and L3 dermatomes (figure 1A-B-C). Scattered few guttate lesions were observed outside the area of primary or adjacent dermatomes. Affected body surface area was approximately 10%. Mucosal membrane, nail and joint were spared. The patient had no familial history of psoriasis. Vital signs and routine laboratory tests were in normal range. Since these lesions were resistant to topical treatments, we decided to initiate systemic treatments and plan a skin biopsy. Pathological findings from skin lesion revealed epidermal acanthosis and hyperproliferation with elongated and club-shaped dermal papillae. In the papillary dermis the capillaries had increased in number and length and had tortuous appearance. Edema was seen especially at the upper parts of the papillae. There was a mixed perivascular infiltration of lymphocytes, macrophages and neutrophils. The accumulation of neutrophils within a spongiotic pustules in the stratum cornenum, surrounded by parakeratosis, as a micro abscess of Munro was seen (figure 2A-B). These features consisted with psoriasis. As the patient's

dermatomal skin lesions did not resolve by topical treatment, methotrexate (15mg/weekly, single dose, oral) was administered for her. The use of folic acid supplementation and laboratory tests were also considered. After 12 weeks of treatment no significant changes in PASI score and distribution of the lesions were seen and patient was not satisfied. She rejected to use biological treatment or phototherapy. Acitretin (0.5mg/kg/day) was added to the previous treatment with very careful monitoring because of the risk of sever hepatotoxicity. 8 weeks after this treatment the patient was visited, and skin lesions had improved significantly, and she was satisfied (figure 3).

Figure 1.A,B,C

Figure 2.A,B

Figure 3

Case 2:

A 38- year-old female presented to our dermatology clinic with the chief complaint of an old single plaque on her left ear since 9 years ago. She had been receiving topical treatment but the lesion had recurred several times in the exact same spot. She had no systemic symptoms and had not received systemic treatments previously. On physical examination, an erythematous scaly lesion was noted on the concha of her left ear (Figure 4). Physical examination of other organs was completely normal. She denied having any similar lesions on other parts of her body. She was first diagnosed with DLE, but the histopathologic findings in the biopsy did not support DLE and were instead consistent with psoriasis (figure 5A-B).

Figure 4

Figure 5.A,B

Discussion

There are many different clinical manifestations of psoriasis with plaque-type psoriasis being the most common. Plaque psoriasis also known as discoid psoriasis is presented with inflamed erythematous lesions covered by silvery scales that usually appear on the scalp, trunk and the extensor surfaces of the limbs [7]. In our second case, the patient had a solitary plaque on the concha of her left ear for 4 years without any similar lesions on other parts of the body. It was recurrent in the exact same spot and there were no other signs and symptoms supporting psoriasis. The most important differential diagnosis was discoid lupus erythematous (DLE). DLE is basically characterized by erythematous and violaceous scaly plaques that result in atrophy and scarring [8]. Typical histopathologic findings of DLE include vacuolar alteration of the basal layer, thickening of the basement membrane, follicular plugging, hyperkeratosis and atrophy of the dermis [9]. In our case the diagnosis of DLE was eliminated by inconsistent histopathology.

The first case report also presents an usual dermatomal psoriasis resistant to topical treatment. The most important differential diagnosis included lichenoid epidermal nevus, ILVEN (linear inflammatory verrucous epidermal nevus), Kaposi sarcoma, linear psoriasis, and linear lichen planus [10,11]. Linear psoriasis presents by linear distribution of psoriatic lesions along blaschko's lines and may be confused with ILVEN. ILVEN however, develops during the first month of life and progresses slowly. ILVEN is often irresponsive to antipsoriatic drugs [10-13].

The pathogenesis of psoriasis is not fully understood. It is a multifactorial condition which is influenced by immunologic and genetic factors [2]. According to previous studies, psoriasis is associated with certain human leukocyte antigen (HLA) alleles including HLA-CW6, HLA-B27 and HLA-B13. Also, high levels of dermal and circulating TNF-α**and** increased activity of T-cells have been noted in previous studies [6, 14-20]. Pathogenesis of linear psoriasis could be explained by the concept of genetic mosaicism as Happle suggested that the loss of heterozygosity would occur in somatic cells during embryogenesis and it can be a good explanation for the non-hereditary linear distribution pattern of some skin diseases [21-23].

We reviewed the PubMed database (1950-present) and apparently this is the first report of dermatomal

psoriasis. Further research need to be done to unravel the unknown pathogenesis of such conditions to get a better understanding of the disease and its potential treatment options.

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