DERMATOLOGICA SINICA 30 (2012) 51–56

Contents lists available at SciVerse ScienceDirect

Dermatologica Sinica

journal homepage: http://www.derm-sinica.com

CASE REPORT

Concomitant occurrence of acneiform eruption, alopecia areata, and urticaria during adalimumab treatment in a patient with pustulosis palmoplantaris: Case report and literature review

Guan-Yi He, Tsen-Fang Tsai*

Department of Dermatology, National Taiwan University Hospital, Taipei, Taiwan

ARTICLE INFO

Article history:
Received: Sep 24, 2010
Revised: Nov 9, 2010
Accepted: Apr 11, 2011

Keywords:
acne
adalimumab
alopecia areata
urticaria
ustekinumab

ABSTRACT

Adalimumab is a fully human immunoglobulin G1 monoclonal antibody against tumor necrosis factor (TNF)-α that is increasingly used for the treatment of many autoimmune diseases. However, it has also been reported that adalimumab can induce many adverse cutaneous reactions, including paradoxical psoriasiform eruptions. We describe a patient with pustulosis palmoplantaris who developed four cutaneous adverse reactions, including eczematous lesions, acneiform eruption, alopecia areata, and urticaria during adalimumab treatment. A common histopathological finding in these acneiform and urticarial lesions was the presence of eosinophilic infiltrates. Some authors assume that cross-regulation between TNF-α and interferon-α may contribute to development of a clinical spectrum of cutaneous reactions in predisposed individuals undergoing anti-TNF therapy. The use of different biologics, including adalimumab, etanercept, and ustekinumab, did not seem to improve pustulosis palmoplantaris disease activity in our patient.

Introduction

Adalimumab is a fully human monoclonal antibody against tumor necrosis factor (TNF)-α that is increasingly used for the treatment of many autoimmune diseases, including psoriasis and pustulosis palmoplantaris (PPP), owing to its efficacy and safety. However, it has also been reported that adalimumab induces various adverse cutaneous reactions. We describe a patient with PPP who developed four unusual adverse cutaneous reactions during adalimumab treatment.

Case report

A 50-year-old Taiwanese male who was a smoker presented with recurrent painful pustules with hyperkeratosis and desquamation over his palms and soles since 2008 (Figure 1A,B). PPP was diagnosed. He had been treated with different conventional therapeutic agents, including methotrexate, acitretin, cyclosporine, and topical corticosteroids, with limited effects. He had also experienced mild elevation of liver enzymes due to methotrexate and complained of headaches and hypertension due to high-dose cyclosporine. He was unable to undergo regular phototherapy because he lived in a rural area. He was referred to our hospital in 2009. After screening for tuberculosis and hepatitis B, he received subcutaneous injections of adalimumab (Humira®, Abbott Laboratories, Abbott Park, IL, USA) at a dose of 40 mg every other week in combination with methotrexate (15 mg/week).

However, within 1 week after the third injection of adalimumab, many mildly tender follicular erythematous papulonodules with pustules developed over his face and trunk, especially over the axillae, groin, and buttocks (Figure 2B). Histopathological examination of a skin biopsy from the left cheek revealed a follicular pustule containing keratins with dense neutrophilic and eosinophilic infiltrates. The eosinophils were located mainly in the perifollicular dermis, whereas the neutrophils and a few eosinophils were located at the orifice of the follicle. No bacterial clumps were found (Figure 2C,D). A pus culture yielded small amounts of coagulase-negative staphylococci and *Propionibacterium acnes*, and inflamed acne was diagnosed. The peripheral eosinophil count was within normal limits.

One week after the development of acneiform eruptions, a generalized eczematous rash and itchy wheal-like papules and

* Corresponding author. Tsen-Fang Tsai, Department of Dermatology, National Taiwan University Hospital, No. 7 Chung-Shan South Road, Taipei 100, Taiwan. Tel.: +886 2 23562141; fax: +886 2 23934177.
E-mail address: tftsai@yahoo.com (T.-F. Tsai).

1027-8117/$ – see front matter
doi:10.1016/j.dsi.2011.09.010

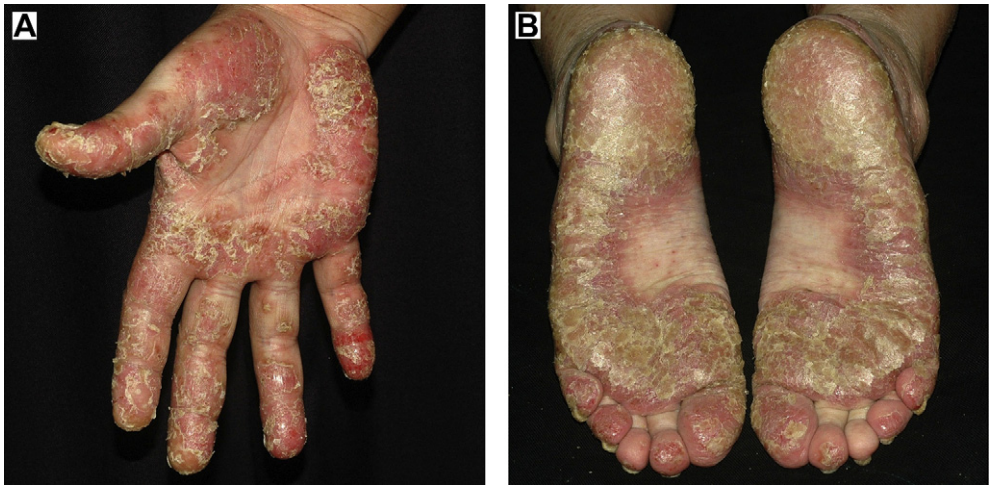

Figure 1 (A,B) Many pustules with hyperkeratosis and desquamation on the patient's palms and soles.

plaques developed over the patient's trunk and extremities. Individual urticarial lesions subsided within 24 hours, whereas the eczematous lesions persisted beyond 24 hours (Figure 3). Moreover, several well-defined hairless patches of up to coin size appeared over his parietal scalp at the same time. No overlying scalp skin changes were found and a hair pull test was positive with exclamation mark hairs (Figure 4). Alopecia areata (AA) was diagnosed clinically. The patient reported that he had not had previous episodes of acne vulgaris, urticaria or AA. A skin biopsy from one of the urticarial plaques over his shoulder showed perivascular and interstitial infiltrates composed of eosinophils, lymphocytes, and neutrophils without vasculitis. Interstitial dermal edema was also noted. The histopathological findings favored a hypersensitivity reaction. When the fourth and fifth doses of adalimumab were given, all of the skin lesions became more severe. Therefore, we discontinued adalimumab and prescribed doxycycline 100 mg twice daily for the acneiform eruptions. Intra-lesional triamcinolone acetonide was also given for the larger inflamed nodules, with good efficacy. However, the urticarial eruptions responded poorly to different oral antihistamines, including levocetirizine, fexofenadine, and desloratadine. He was thus treated with methotrexate (15 mg/week) and cyclosporine (75 mg/day) because both

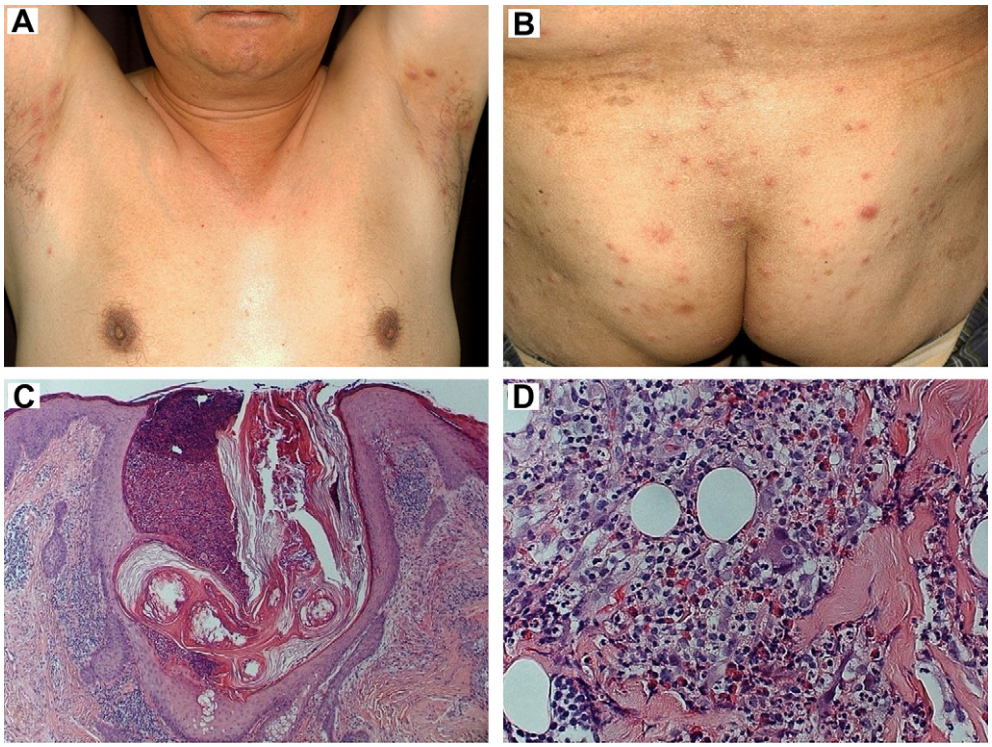

Figure 2 (A,B) Many follicular-corresponding erythematous papules, pustules, and nodules were noted over the patient's face, axillae, groin, and buttocks. (C) Pathology revealed a follicular pustule containing keratins, and neutrophilic and eosinophilic infiltrates. Many neutrophils and a few eosinophils were located at the orifice of the follicle (H&E, 40×). (D) Most eosinophils were located in the perifollicular dermis (H&E, 200×).