Perianal Dermatophytosis During Secukinumab Therapy for Plaque Psoriasis

Psoriasis has traditionally been considered a helper T cell, type 1 (Th1)-skewed immunologic response, with its cytokines, interleukin (IL)-12, and interferon γ. However, recent elucidation of the Th17 pathway in psoriasis immunopathogenesis has led to the development of therapeutic efforts targeting the IL-17/Th17 axis.1 One of these agents, secukinumab (Novartis Pharmaceuticals), is an injectable, fully human monoclonal antibody that targets IL-17A. Secukinumab was recently approved by the US Food and Drug Administration for treatment of moderate to severe plaque psoriasis following the establishment of safety and effectiveness in 4 clinical trials.2-5 The most common adverse effects reported were infection, nasopharyngitis, headaches, pruritus, hypertension, and back pain.

Among the 50 patients in our practice currently receiving secukinumab for plaque psoriasis, we have encountered 2 cases of perianal dermatophytosis. To our knowledge, no cases of tinea cruris in patients receiving secukinumab have been reported.

Report of Cases | Case 1. A woman in her 40s with a 20-year history of plaque psoriasis had tried treatment with adalimumab, etanercept, ustekinumab, and apremilast; all treatments failed. After 3 months of secukinumab injections, 300 mg, once per month, all of her psoriasis cleared except her inverse psoriasis. She complained of pruritus and burning around her anus and medial buttocks. Examination revealed an annular, erythematous scaly plaque with a serpiginous border around the anus and medial buttocks (Figure, A). She was prescribed terbinafine, 250 mg, once daily, and instructed to apply butenafine cream twice daily for 1 month. The patient returned early for follow-up 3 weeks later with clearance of her eruption (Figure, B).

Case 2. A woman in her 60s with a 3-year history of plaque psoriasis complained of a pruritic, burning perianal eruption that developed after 5 weeks of secukinumab injections, 300 mg, once per month. The rest of her psoriasis was improving significantly, but the condition in the perianal and medial buttocks area was worsening, showing annular erythematous scaly plaque with a raised serpiginous border. After treatment with oral amphotericin B for 14 days and terbinafine cream for 1 month, her eruption completely cleared.

Of note, neither patient had any history of dermatophyte infection, nor were they applying any topical medications prior to secukinumab therapy. Neither patient received confirmatory diagnostic tests of dermatophyte infection owing to their strongly indicative clinical presentations.

Discussion | Other types of fungal infection have been noted with secukinumab. Tinea pedis was observed in 4 patients during the ERASURE study,5 totaling less than 1% in the 4 clinical trials.2-5 The FEATURE,2 FIXTURE,3 ERASURE,5 and JUNCTURE4 trials reported 31 and 16 cases of candidiasis in the 300-mg/wk and 150-mg/wk secukinumab treatment groups, respectively. These cases were classified as oral/vulvovaginal, mild to moderate, and self-resolved or responsive to standard therapy.

Figure. A Case of Tinea Cruris in a Patient Receiving Secukinumab for Plaque Psoriasis

![Image: A Case of Tinea Cruris in a Patient Receiving Secukinumab for Plaque Psoriasis](image_url)

A. Annular erythematous plaque with serpiginous border in the perianal area extends to the medial buttocks in a patient who had been receiving secukinumab injections, 300 mg/wk, for 3 months. B. Resolution of the eruption 3 weeks after starting oral and topical allylamine treatment.
The mechanism of action of secukinumab in fungal pathogenesis remains unknown, though it is logical to assume that through IL-17 inhibition, secukinumab counters IL-17’s antifungal properties as well. Individuals with inborn IL-17 pathway deficiencies present with increased susceptibility to Candida and chronic mucocutaneous candidiasis. Patients with decreased serum IL-17 levels, such as certain adult patients with T-cell leukemia or lymphoma, have frequent occurrences of superficial dermatophytoses. Because IL-17-producing cells stimulate the keratinocyte-produced antimicrobial peptides human beta-defensin-2 and LL-37 and neutrophil recruitment, this decrease in IL-17 may reduce cutaneous innate immunity and predispose to superficial dermatophytosis.

We report these 2 cases as an observation of a potential adverse effect of secukinumab, in triggering or exacerbating tinea cruris in patients with psoriasis. With increased use of this medication and other treatments targeting IL-17, it may be possible to further elucidate the prevalence of this adverse effect and the role of IL-17 inhibition in the pathogenesis of superficial dermatophytoses.

Olivia Leigh Quach, MD
Sylvia Hsu, MD

Author Affiliations: Department of Dermatology, Baylor College of Medicine, Houston, Texas.

Corresponding Author: Sylvia Hsu, MD, Department of Dermatology, Baylor College of Medicine, 1977 Butler Blvd E6.200, Houston, TX 77030 (shsu@bcm.edu).


Conflict of Interest Disclosures: Dr Hsu has served as consultant to Abbvie, Amgen, Janssen, and Novartis, for which she has received honoraria. No other disclosures are reported.


Cutaneous T-Cell Lymphoma Misdiagnosed as Lipodermatosclerosis

Herein, we describe an obese woman with a 2-year history of a persistent indurated plaque on the right calf misdiagnosed as lipodermatosclerosis, while the true diagnosis was mycosis fungoides (MF). To our knowledge, there have been no other cases of MF mimicking lipodermatosclerosis reported.

Report of Case | A woman in her 60s presented with an indurated, erythematous, nontender plaque on her right leg. There was associated aching pain and numbness, but no peripheral edema was noted, and her ankle was not involved. She had previously been evaluated by an internist, a vascular surgeon, a local dermatologist, and a dermatologist at a tertiary referral center, all of whom diagnosed lipodermatosclerosis based on her clinical examination and suggested topical corticosteroid therapy and compression. The vascular surgeon had referred the patient to an oncologist for a biopsy, but a biopsy was not performed owing to concern about poor healing. The dermatologic consultation had noted “eczematous” changes on the trunk and thighs that responded partially to topical corticosteroids. Vascular studies had revealed venous insufficiency in both legs but worse on the unaffected leg.

Physical examination at presentation revealed an obese woman with nonspecific, slightly scaly patches on her abdomen and tan petechial patches on her legs. There was a 10-cm indurated, erythematous, nontender plaque on the right posteromedial calf (Figure 1). The surface had a peau d’orange appearance. There was no peripheral edema, and the ankles were uninvolved. The distal portion of the legs appeared to be normal in size, and the skin was not bound down. Her thighs were increased in size due to her obesity, giving the overall appearance that there was distal tapering.

An incisional biopsy of the right distal calf was performed revealing a monomorphic population of atypical, dermal-based lymphocytes that were small to medium in size and did not show significant anaplasia (Figure 2). Staining found CD3+ and CD4+ T cells with a diminished expression of CD7 and no CD8 and CD30 expression. A clonal T-cell receptor gene rearrangement was also identified. A second biopsy of a tumor on the contralateral thigh 3 weeks later revealed MF again. A reactive node was present in the right inguinal chain, but findings of a positron emission tomography–computed tomography scan were otherwise negative.