

BRIEF ARTICLE

Development of Psoriasis During Treatment with Weekly Dupilumab for Refractory Hailey-Hailey Disease

Matthew W. McEwen, MD¹, Laura Ragmanauskaite, MD¹, Emily Jones, MD¹, Mariantonieta Tirado, MD¹, Allison Vaughan Jones, MD¹

¹ Department of Dermatology, University of Tennessee Health Science Center, Memphis, TN

ABSTRACT

Hailey-Hailey Disease is a rare inherited disease that is often to treat. Several case reports have discussed the potential role of dupilumab for the treatment of Hailey-Hailey Disease. Our case presents a patient who required more frequent dosing of dupilumab than previously reported to manage his symptoms. His course was further complicated by development of psoriatic lesions which were successfully treated with topicals steroids, allowing continuation of dupilumab.

INTRODUCTION

Hailey-Hailey disease (HHD) is an autosomal dominant inherited disease that presents with chronic, painful erosive and vesicular lesions, most commonly in the intertriginous regions, and it is often difficult to treat.

Several recent case reports demonstrated clinical improvement in patients with HHD who were treated with dupilumab.¹⁻⁴ In this article, we present the case of a patient with refractory HHD who was treated with dupilumab administered weekly and had significant improvement but developed new-onset psoriasis during treatment.

CASE REPORT

A 30-year-old male presented with long-standing HHD. Physical examination revealed red-brown, fissured, and crusted papules and plaques involving the bilateral

axillae, umbilicus, inguinal folds, mons pubis, penis, scrotum, perineum, and perianal skin (**Figure 1**). Numerous topical and systemic treatments, alone or in combination, had been used over time with minimal improvement including topical steroids and calcineurin inhibitors, topical antibacterial ointments, naltrexone, dapsone, glycopyrrolate, oxybutynin, gabapentin, acitretin, and several onabotulinumtoxinA injections. Courses of systemic antibiotics were required intermittently for treatment of bacterial superinfections.

After therapeutic failure of treatments listed above, the patient was started on dupilumab 600 mg SQ on day 1, then 300 mg SQ every other week. He reported near clearance with initial loading doses, followed by reversion to baseline disease status with maintenance dosing. Based on his report of marked improvement with loading doses, the maintenance dose of dupilumab was increased to 300 mg SQ once weekly with significant improvement (**Figure 1**).

September 2023 Volume 7 Issue 5

Approximately 5 months into treatment with weekly dosing, the patient developed scaly papules and plaques on the trunk and extremities clinically and histologically consistent with psoriasis and acantholysis (**Figure 2a**, **Figure 3**). He initially stopped dupilumab but following swift resolution of the psoriasiform lesions with only 3 weeks of treatment with topical steroids, he re-started dupilumab 300 mg SQ weekly without further side effects to date (**Figure 2b**).

DISCUSSION

In the recent case series, all patients were treated with a standard dose of dupilumab for atopic dermatitis: 300 mg SQ every other week.¹⁻⁴ Our patient also had significant improvement soon after the 600 mg loading dose, but the improvement was not sustained with 300 mg every other week maintenance dosing. Subsequent increase to 300 mg weekly maintenance dosing led to significant disease improvement, but, unfortunately, our patient developed new-onset psoriasis approximately 5 months later (**Figure 2**). The biopsy was histologically consistent with psoriasis in association with suprabasal bulla formation and acantholysis (**Figure 3**).

While rare, there have been reports of patients developing psoriasis while on dupilumab; in fact, a recent systematic review of 26 studies examined the characteristics of 47 patients who developed psoriatic cutaneous eruptions while on dupilumab.⁵ The proposed mechanism posits that by targeting IL-4, dupilumab disinhibits T-helper 1 and T-helper 17 cells, and for susceptible patients, this shift leads to development of psoriasis.⁵

Although standard maintenance dosing of dupilumab is 300 mg every other week, the safety of weekly dosing has been shown in

previous studies demonstrating a similar incidence of adverse effects with weekly or every other weekly dosing of dupilumab in atopic dermatitis.⁶ Furthermore, a long term, open-label extension study of patients receiving dupilumab 300 mg weekly demonstrated a similar safety profile to the initial phase 3 studies.⁷ Therefore, it is unclear if the weekly dosing schedule for our patient contributed to or exacerbated the development of psoriasis. The available cases describing the use of dupilumab in treating HHD have not reported adverse events, although with the small number of cases reported, it remains unclear whether HHD patients are at higher risk for adverse events from dupilumab.¹⁻⁴

Given the limited number of reports in the literature, further study will be required to determine the optimal dosing protocol and safety profile of dupilumab as a treatment for HHD. Nevertheless, dupilumab remains a promising emerging treatment option for this challenging disease.

Conflict of Interest Disclosures: None

Funding: None

Corresponding Author:

Laura Ragmanauskaite, MD
Department of Dermatology, University of Tennessee Health Science Center; 930 Madison Avenue, Suite 840, Memphis, TN 38163.
843-530-0304
Email: lragna@uthsc.edu

References:

1. Alzahrani N, Grossman-Kranseler J, Swali R, et al. Hailey-Hailey disease treated with dupilumab: a case series. *Br J Dermatol*. 2021;185(3):680-682.
2. Alamon-Reig F, Serra-Garcia L, Bosch-Amate X, Riquelme-Mc Loughlin C, Mascaro JM, Jr. Dupilumab in Hailey-Hailey disease: a case series. *J Eur Acad Dermatol Venereol*. 2022.

3. Licata G, Buononato D, Calabrese G, et al. A case of Hailey-Hailey disease successfully treated with dupilumab. *Int J Dermatol*. 2022.
4. Brito Caldeira M, Pestana M, Duarte B. Successful Treatment of Hailey-Hailey Disease With Dupilumab. *Actas Dermosifiliogr*. 2023.
5. Brumfiel CM, Patel MH, Zirwas MJ. Development of psoriasis during treatment with dupilumab: A systematic review. *J Am Acad Dermatol*. 2022;86(3):708-709.
6. Simpson EL, Bieber T, Guttman-Yassky E, et al. Two Phase 3 Trials of Dupilumab versus Placebo in Atopic Dermatitis. *N Engl J Med*. 2016;375(24):2335-2348.
7. Deleuran M, Thaci D, Beck LA, et al. Dupilumab shows long-term safety and efficacy in patients with moderate to severe atopic dermatitis enrolled in a phase 3 open-label extension study. *J Am Acad Dermatol*. 2020;82(2):377-388.

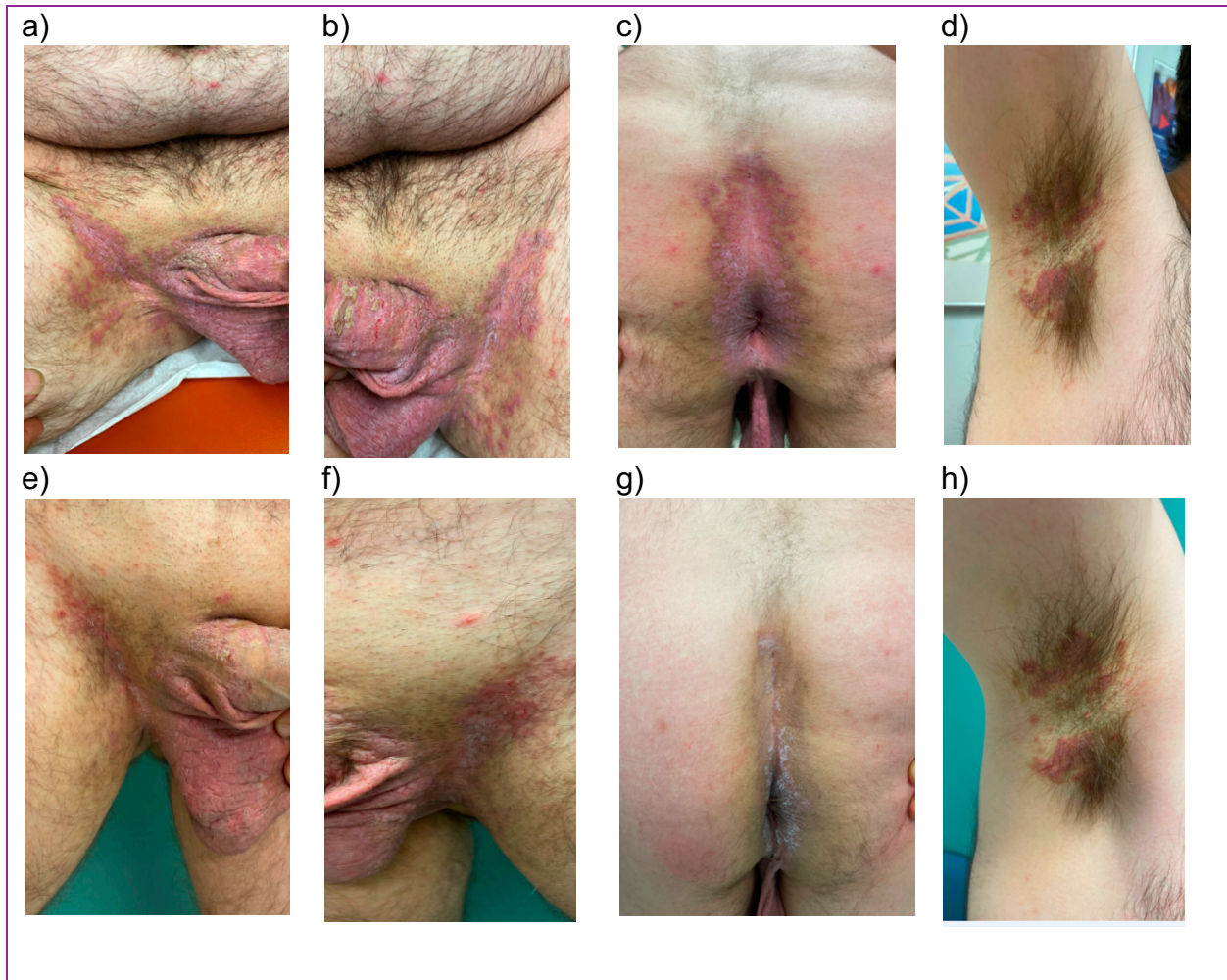


Figure 1. Red-brown, fissured, and crusted papules and plaques involving the patient's groin, buttocks, and axilla prior to treatment (a-d) and after treatment with weekly dupilumab for 3 months (e-h).

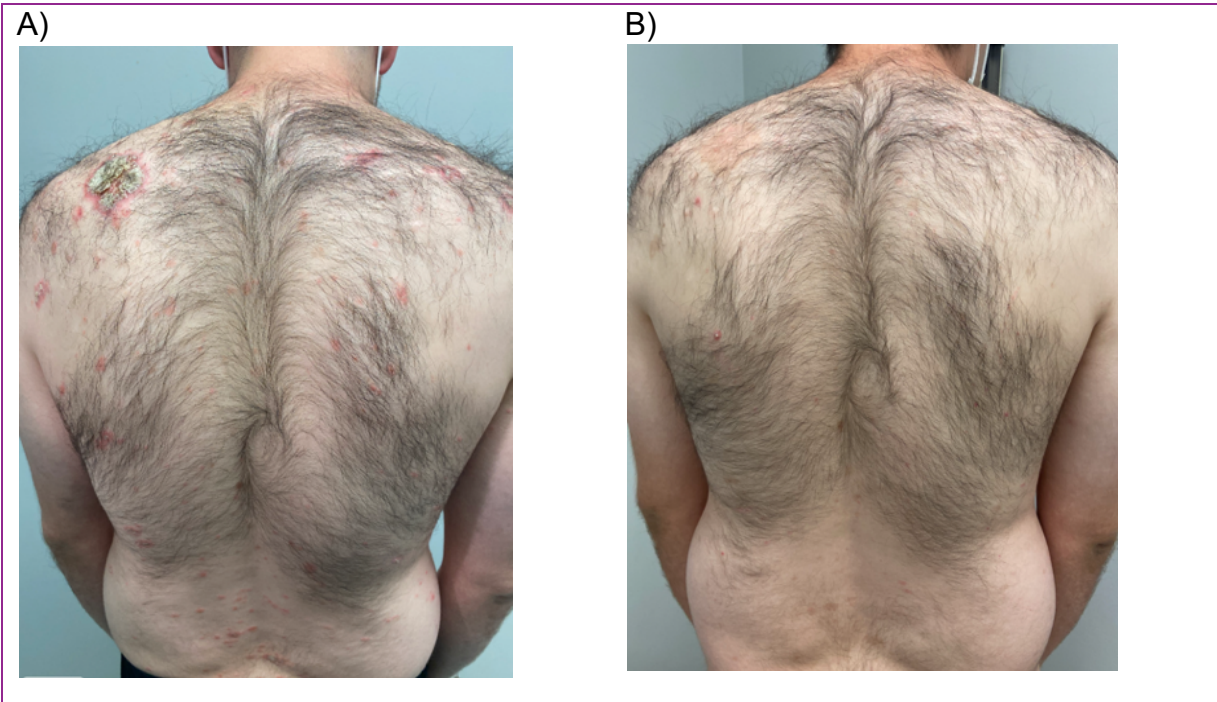


Figure 2. Psoriatic lesions that developed several months into treatment with weekly dupilumab (a) and after treatment with topical steroids (b).

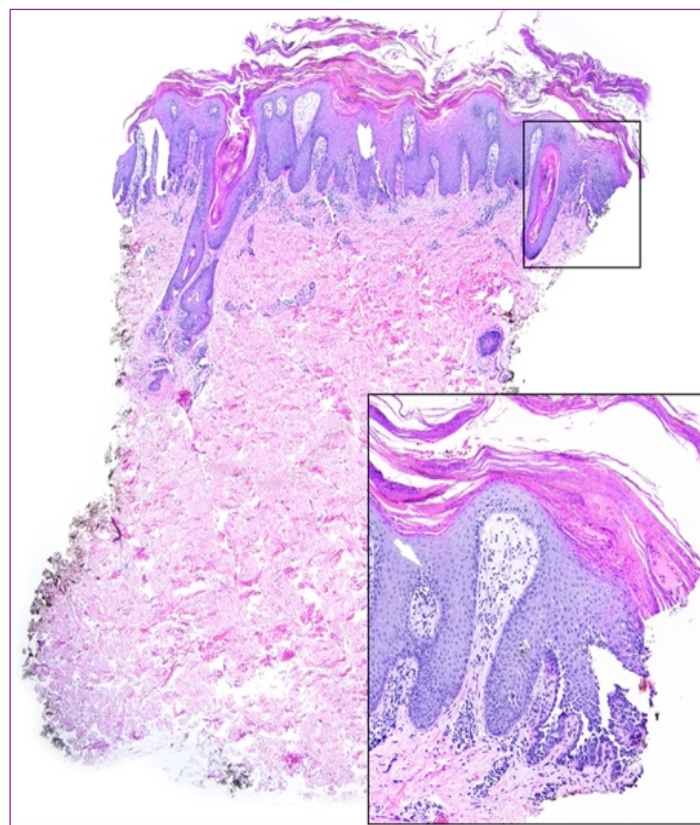


Figure 3. Biopsy was histologically consistent with psoriasis in association with suprabasal bulla formation and acantholysis.