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# Resolution of folliculitis decalvans with medical honey

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## Abstract

Folliculitis decalvans is a rare scarring alopecia that presents with indurated, tender pustules and papules on the vertex and occipital scalp. Although systemic antibiotics with activity against *Staphylococcus* species provide some symptomatic improvement, folliculitis decalvans remains a significant management challenge and often exhibits a relapsing-and-remitting course. In this report, we posit the potential utility of medical grade honey as a safe and cost-effective adjuvant therapy in the treatment of folliculitis decalvans. We describe a patient with painful, boggy scalp pustules who achieved clearance of his scalp lesions with the addition of Manuka honey. To our knowledge, this report is the first to demonstrate the clinical use of honey in the management of folliculitis decalvans and may lend support to the role of *Staphylococcus* in the pathogenesis of this disease.

*Keywords: folliculitis decalvans, medical honey, Manuka honey*

## Introduction

Folliculitis decalvans is a rare scarring alopecia characterized histologically by suppurative folliculitis, a neutrophil-predominant perifollicular infiltrate, and rupture of the hair follicle. The disease presents with crops of follicular pustules, perifollicular erythema, and hemorrhagic crusts and erosions, commonly on the vertex and occipital scalp [1]. Affected areas are thickened and indurated, often with perifollicular tufting [2]. Because an abnormal host inflammatory response to *Staphylococcus*

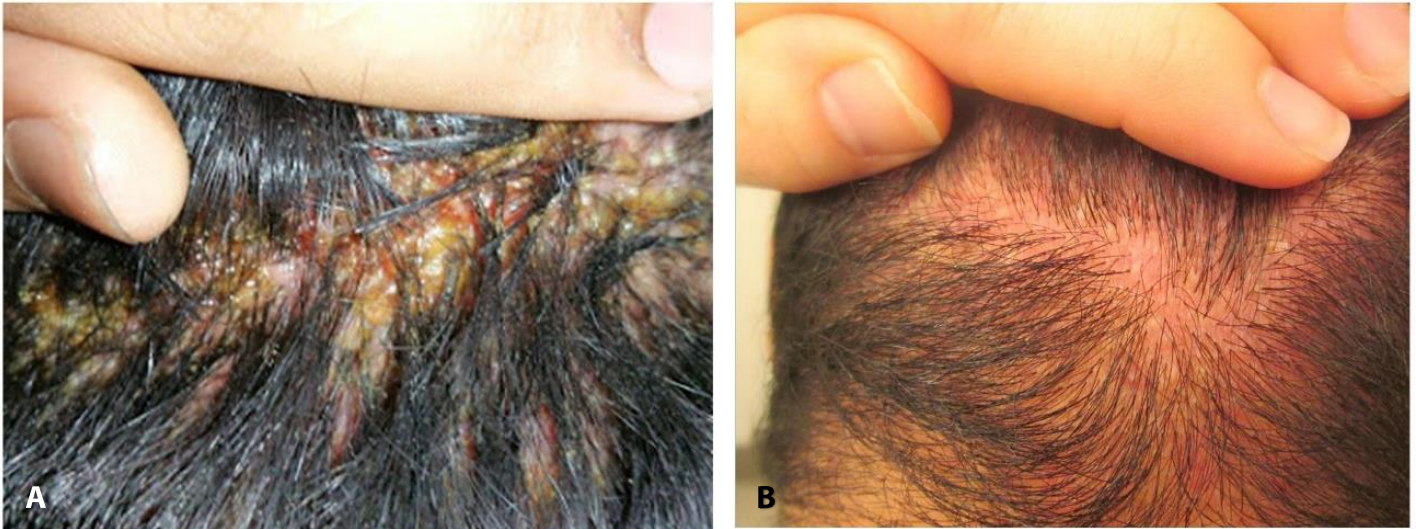
*aureus* has been implicated in the disease's pathogenesis, anti-staphylococcal antibiotics are first-line treatment [3]. Other treatments include topical antibiotics and topical or intralesional corticosteroids.

Recently there has been increasing interest in therapeutic honey given its antibacterial activity particularly in post-surgical wound care [4]. Herein, we present a patient with folliculitis decalvans who trialed several topical and systemic treatment regimens and experienced significant clearing of his scalp lesions with the addition of medical grade honey.

## Case Synopsis

A 20-year-old man presented with three years of painful, boggy scalp with pustules refractory to multiple therapies. Physical examination revealed numerous pustules and boggy inflammatory papules on the occiput and vertex scalp with no sinus tracts or scarring (**Figure 1A**). Cultures grew coagulase-negative *Staphylococcus*, rare *Staphylococcus aureus*, and rare *Staphylococcus capitis*. Punch biopsy revealed an inflammatory scarring alopecia characterized by perifollicular fibrosis and mixed perifollicular and dermal neutrophil-predominant infiltrate (**Figure 2A, B**).

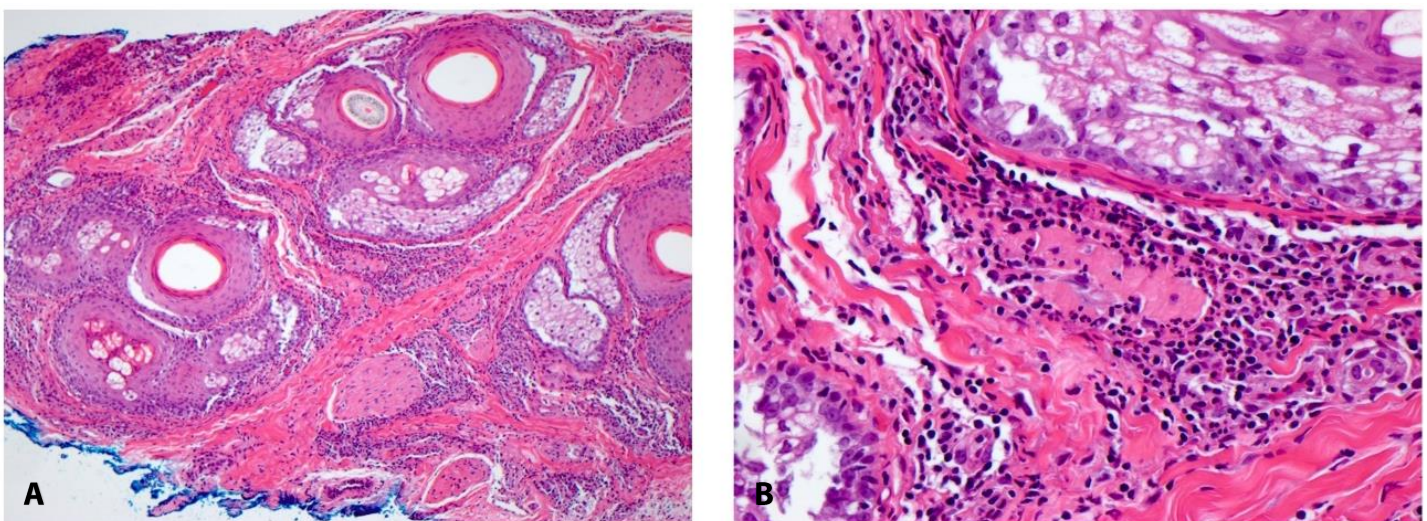
Treatments tried included repeated intralesional triamcinolone, 5mg/mL, clobetasol 0.05% solution for 6 months at least, prednisone 5-10mg with minocycline or doxycycline 100mg BID on two-month tapers, and isotretinoin as dosed for acne. Of these therapies, the combination of prednisone and



**Figure 1.** **A)** Pustules and boggy inflammatory papules on the occiput, vertex, and temporal scalp at initial visit. **B)** Resolving scalp pustules after one month with Manuka honey applications.

a tetracycline was most effective, reducing his pain to 0 out of 10. However, he developed right-sided visual changes on minocycline and esophagitis on doxycycline. Although he experienced mild improvement with isotretinoin, his scalp never cleared and he developed intermittent nose bleeds while on the drug necessitating cessation. Although he had not tried biologics, clindamycin/rifampin, or dapsone, given the difficulty he had experienced with previous systemic therapies, he was prescribed cephalexin 500mg BID and continued this for three months while awaiting approval for adalimumab. About one month after starting cephalexin, the

patient self-initiated Manuka honey after reading about its antibacterial properties. After one month of nightly honey application, he experienced reduction in the size and tenderness of his scalp pustules (**Figure 1B**). Six months after using Manuka honey and cephalexin, his scalp pustules completely cleared allowing him to taper off cephalexin. Given his significant improvement, he declined adalimumab. Since then, he has experienced one scalp flare for which he was prescribed cephalexin but decided to use honey alone and his scalp cleared within one week.



**Figure 2.** Punch biopsy with hematoxylin and eosin stains showing an inflammatory scarring alopecia with perifollicular fibrosis, mixed perifollicular and dermal infiltrate of predominantly neutrophils, and a detached fragment of fibrinopurulent debris consistent with pustule. **A)** 100 $\times$ , **B)** 400 $\times$ .

## Case Discussion

The current treatment of folliculitis decalvans includes anti-inflammatory agents like corticosteroids and anti-staphylococcal antibiotics. Given the side effects of long-term treatment as experienced by our patient, the lack of a “gold standard” and cure, and the rise of antibiotic resistance, alternative therapies are urgently needed.

Medicinal use of honey dates back to ancient times and has been recently used in wound care owing to its activity against gram-positive skin flora. Several in vitro studies have demonstrated the efficacy of medical grade honey against gram-positive aerobic cocci, the primary pathogens in chronic wounds and folliculitis decalvans [5]. A meta-analysis on the clinical use of honey revealed positive effects on wound care in 17 trials with 1965 patients and 16 trials on 533 animals [4]. Honey's antibacterial properties are believed to be related to its high osmolarity, acidic pH 3.2-4.5, hydrogen peroxide content, and other plant-based substances [5]. Manuka honey is produced in New Zealand from the *Leptospermum scoparium* tree and has been shown to prevent growth of *Staphylococcus aureus*, possibly

via antibacterial properties of an unidentified phytochemical component [6].

## Conclusion

In summary, we describe a patient with biopsy-proven folliculitis decalvans who trialed topical and oral agents while suffering intolerable and potentially dangerous side effects. This disease poses a significant treatment challenge as there is currently no cure and few therapies consistently relieve the pain, and related hair loss that accompany it. Following the addition of Manuka honey to cephalexin, the patient's scalp lesions cleared and he continues on honey therapy, remaining in remission longer than with any other topical or oral therapy he has tried. Given its safe and cost-effective profile in addition to its anti-staphylococcal properties, medical grade honey should be considered by dermatologists as an adjuvant therapy to systemic options in the treatment of folliculitis decalvans.

## Potential conflicts of interest

The authors declare no conflicts of interests.

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