Eyebrow Regrowth in Patients with Frontal Fibrosing Alopecia Treated with Low-Dose Oral Minoxidil

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Established Facts

- Partial or complete eyebrow loss is seen in most patients with frontal fibrosing alopecia (FFA).
- Treatment options for eyebrow loss in FFA and supporting evidence remain scarce.

Novel Insights

- We report eyebrow regrowth in patients with frontal fibrosing alopecia (FFA) treated with low-dose oral minoxidil (OM).
- Low-dose OM could be a promising adjunctive therapy for treatment of the eyebrows in patients with FFA.

Keywords

Minoxidil · Frontal fibrosing alopecia · Cicatricial alopecia · Eyebrow

Abstract

Introduction: The eyebrows are an important facial feature that shape one's physical appearance and play a role in non-verbal communication. Partial or complete eyebrow loss is seen in most patients with frontal fibrosing alopecia (FFA). Despite the scarring nature of FFA, eyebrow hair regrowth has been previously reported. Nevertheless, treatment options and supporting evidence remain scarce. **Case Presentation:** We report eyebrow regrowth in 7 patients with FFA

treated with low-dose oral minoxidil (OM). **Conclusion:** Low-dose OM could be a promising adjunctive therapy for treatment of the eyebrows in patients with FFA, particularly in early disease.

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Introduction

The eyebrows are an important facial feature that shape one's physical appearance and play a role in non-verbal communication. Partial or complete eyebrow loss is seen in most patients with frontal fibrosing alopecia (FFA). It is uncommon for patients with FFA to

Fig. 1. Eyebrow regrowth in FFA. Picture from a 50-year-old patient with FFA before (**a**) and after (**b**) three-month-treatment with OM, showing partial regrowth of eyebrows. Eyebrow tattoo remained unchanged during the course of treatment. FFA, frontal fibrosing alopecia; OM, oral minoxidil.

experience eyebrow regrowth with systemic therapy alone [1]. Regrowth has been previously reported with intralesional triamcinolone and topical bimatoprost [1, 2], but treatment options and supporting evidence remain limited.

Recently, low-dose oral minoxidil (OM) has been successfully used for androgenetic alopecia (AGA) in both men and women [3, 4]. The authors have used OM to increase hair volume in FFA patients with concomitant AGA. Interestingly, either partial or complete eyebrow regrowth was noted in a small cohort of patients after OM initiation.

Case Reports

We report 7 female patients with biopsy-confirmed FFA, age range 35–65 years, presenting with moderate eyebrow loss (less than 50% loss) who were treated with OM. The initial daily OM doses were 0.5 mg (2 patients), 0.75 mg (2 patients), and 1.25 mg (3 patients). At month 3, the dose was increased to 2.5 mg/day in 5 patients, while 2 remained with 1.25 mg/day. After 6 months, comparison of pre- and posttreatment pictures revealed eyebrow regrowth that was rated as partial in 5 and almost complete in 2

patients (shown in Fig. 1). Importantly, in all cases, regrowth was regarded by both physician and patient as cosmetically acceptable new eyebrow hair coverage. Of note, topical medications and intralesional steroids to the eyebrows were not used in any of the above patients. No serious adverse events were reported. In our experience, hypertrichosis secondary to OM is not as common in FFA compared to patients with AGA alone, possibly due to body hair involvement in the setting of FFA. However, interestingly, 1 patient reported regrowth of body hair in areas previously affected by the disease.

Discussion

Despite FFA's scarring nature on the scalp, eyebrow regrowth has been reported and is believed to be possible particularly in early cases of the disease. Indeed, trichoscopic features described for the eyebrows in FFA patients are mainly non-cicatricial [5]. The reason why hair loss at the eyebrows is, at least initially, non-cicatricial has not been fully investigated. Recently, Katoulis et al. [6] reported that sebaceous glands were preserved in eyebrow biopsies in 38% of FFA patients. Considering that sebaceous gland destruction is one of the earliest signs of cicatricial alopecia, its preservation could correlate with the reversibility of eyebrow loss observed in some cases [6].

Donovan et al. previously reported eyebrow regrowth in patients treated with intralesional triamcinolone acetonide at a concentration of 10 mg/mL [1]. However, continuous injections might be required in order to sustain treatment response, and skin atrophy has been reported even when lower concentrations such as 2.5 mg/mL were used [1, 7]. Recently, Murad and Bergfeld [2] reported eyebrow regrowth in a single patient treated with topical bimatoprost solution 0.03%, which is a synthetic prostaglandin analog approved for hypotrachosis of the eyelashes.

The use of OM in FFA has not been explored. Anagen phase promotion of remaining viable hair follicles may account for the regrowth of eyebrow hairs in our patients. Additionally, it was recently suggested that minoxidil may also have anti-inflammatory properties via downregulation of interleukin-1-alpha expression [8]. We believe low-dose OM could be a promising adjunctive therapy for treatment of the eyebrows in patients with FFA, particularly in early disease. Larger randomized controlled trials are necessary not only to confirm our findings but to determine the best dosing regimen as well as verify the Number Needed to Treat of OM in FFA.

Statement of Ethics

All patients gave written consent for publication including images, and research was conducted ethically in accordance with the World Medical Association Declaration of Helsinki.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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Author Contributions

Every author listed meets the qualifications for authorship and has had the opportunity to read and comment upon the submitted manuscript. All authors listed provided substantial contributions to the conception of the work and interpretation of data. All authors participated in drafting the manuscript and revising it critically for important intellectual content. All authors approved the final version of the manuscript.

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