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CASE REPORT

Diffuse Face and Ear Hypertrichosis Caused by 5% Topical minoxidil in an Adult Woman with spontaneous resolution & (Review of literature)

Fares A Alkhayal[1], Ali A Alkinani[2]

[1]Dermatology and dermatologic surgery department, Prince Sultan Military Medical City, Email: *falkhayal@outlook.com*
[2]Medical Service Directorate of Joint Force Command

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Corresponding Author:
Fares A Alkhayal, Dermatology and dermatologic surgery department, Prince Sultan Military Medical City, Email: falkhayal@outlook.com

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Background

Minoxidil is a vasodilator medication known for its ability to promote hair growth. Although it was first introduced as an oral drug to treat hypertension, minoxidil was observed to have the important side-effect of increasing hair growth; this led to the development of a topical formulation as a 2% concentration solution for the treatment of female androgenic alopecia (AGA) and 5% for treating male AGA, which is considered nowadays as a first line US Food and Drug Administration (FDA)-approved treatment for AGA in addition to oral 5-alpha-reductase inhibitor (finasteride) [1]. The mechanism by which minoxidil promotes hair growth is not fully understood but can be related to increasing blood flow due to its vasodilator effects [2]. AGA is characterized by the gradual conversion of terminal hairs into vellus hairs. Alterations in the hair cycle include reduced duration of the anagen phase and increased duration of the telogen phase, resulting in shorter hairs and eventual balding [3]. Side-effects of topical minoxidil include an irritant and allergic contact dermatitis, pruritus, and facial hypertrichosis, which are more often seen with use of 5% solutions rather than 2% [3]. Herein we report the case of a 24-year-old female who developed severe ear and face hypertrichosis after using topical 5% solution minoxidil and who later received spontaneous resolution of her hypertrichosis.

Keywords:
Hypertrichosis
Minoxidil

Case Report

A 24-year-old female known to have AGA was on dutasteride 0.5 mg capsule and on platelet-rich plasma sessions. The patient developed severe hypertrichosis over face and ear after she started using minoxidil 5% solution once daily for 3 months (Figure 1A & B). The patient was advised to stop using topical minoxidil and

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showed complete clearance of ear hypertrichosis after cessation of minoxidil; next, she had her face hypertrichosis successfully treated by hair removal laser (Figure 2A & B).

Discussion:

AGA is the most common form of hair loss; it is characterized by a receding frontal hairline in men and diffuse hair thinning in women, with frontal hairline retention which cause by hyperactivity of 5-alpha-reductase and can affects individual's life quality [3].

Topical minoxidil stimulates new hair growth and helps to stop loss of hair in men with androgenetic alopecia and women with female pattern hair loss [4].

Minoxidil is the only approved topical agent for the treatment of AGA. Minoxidil is a prodrug requiring bio-activation into minoxidil sulfate in hair follicle outer root sheath and The enzyme that catalyses this reaction in the hair follicle is sulfotransferase (SULT1A1), which has a number of variants [7]. The expression of (SULT1A1) in the scalp varies greatly between individuals, and this difference in expression explains the varied clinical response and improvement to topical minoxidil treatment. Low (SULT1A1) activity occurs in approximately 60% of the population and predicts weak hair regrowth [5]. These individuals are likely to require higher concentrations of minoxidil and adjuvant treatment to compensate for low (SULT1A1) activity [5].

Topically minoxdil is available in both 2% and 5% solutions and in foam formulations, giving clinicians and patients more flexibility to select their preferred strength and formulation [4]. The 5% solution has demonstrated greater efficacy than the 2% solution. And foam has greater absorption comparing to solution [5]. Several factors increase responsiveness to topical minoxidil includes younger age, early initiation of treatment, smaller area of involvement and increased number of terminal hairs before initiation of treatment. and Usually at least 4 months of continuous therapy with minoxidil topical solution is required to show response and hair regrowth [6]. The daily dosage for male is 1ml of 5% minoxdil once or twice daily and 1ml of 2% solution or 5% of foam daily for females with maximum dose of 2ml daily for both [7].

Most common Side effects is Irritant contact dermatitis with typical symptoms of pruritus' and scaling. The incidence is lower with 2% comparing to 5% minoxidil. Allergic contact dermatitis can also occur mainly due to propylene glycol (PG) in solution preparation only or due to minoxidil itself [2]. In most patients, hypertrichosis is restricted to the face and upper limbs possibly by inadvertent application or transferring of the product through face [6]. In cases of generalized hypertrichosis, however, it is unlikely that the product reaches the entire body surface. Systemic absorption of topically applied minoxidil is minimal.

Hypertrichosis caused by minoxidil should reverse once this treatment is stopped. And can be treated with hair removal laser or eflornithine cream.

Conclusion:

Androgenetic alopecia is the most prevalent form of hair loss in men and women. Minoxidil is the first line topical treatment for andorgenatic alopecia alone or with other treatment with minimal side effects profile. Minoxidil 5% has greater efficacy but is discouraged to be used in female unlsess she has sever hair thinning. Hypertrichosis caused by minoxdil is reversible upon stopping it.

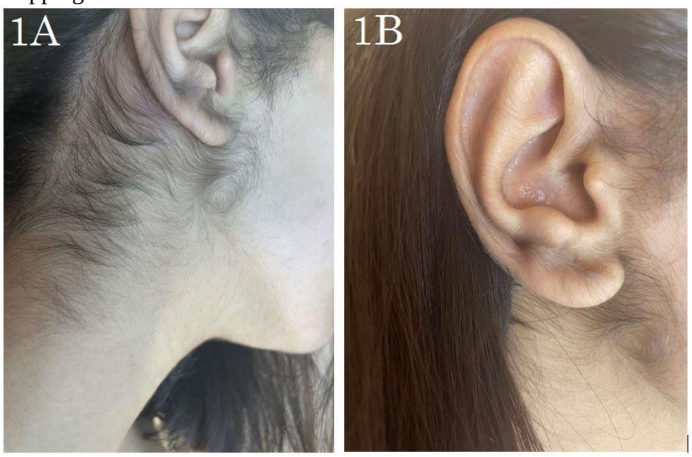

Figure 1: *A & B hypertrichosis over face, eras and neck*

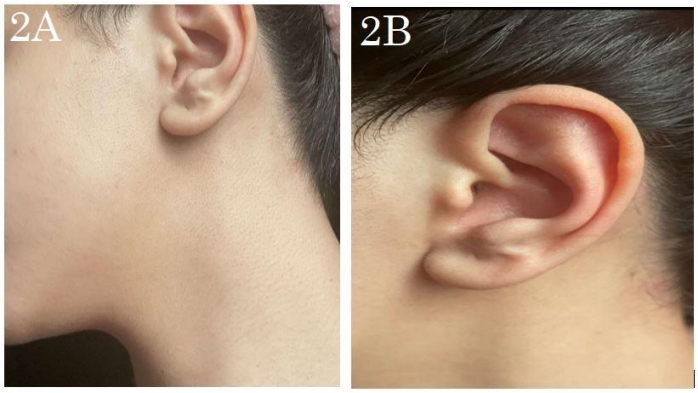

Figure 2: *A & B clearance of hypertrichosis over face, ears and neck*

Abbreviation: Androgenetic alopecia (AGA), sulfotransferase (SULT1A1)

Statement of Ethics

Patient informed consent was signed by the patient.

Disclosure Statement

The authors report no financial and personal interests and have no conflicts of interest.

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