

Microneedling for androgenetic alopecia not responding to conventional treatment

Sudip Parajuli, Upama Paudel

Department of Dermatology and Venereology, Maharajgunj Medical Campus, Institute of Medicine, Tribhuvan University, Kathmandu, Nepal

Corresponding author: Dr. Sudip Parajuli, E-mail: sudipparajuli@gmail.com

ABSTRACT

Microneedling appears to be appealing treatment of androgenetic alopecia (AA). We report five cases of androgenetic alopecia that were treated with microneedling along with oral finasteride and minoxidil, as a first case series from Nepal. Most of them showed moderate to greatly increase in hair growth with satisfaction score of more than 75% without any complications. This case series highlights the importance of considering microneedling as one of the treatment choice for hair growth in patients with AA.

Key words: Androgenetic alopecia; Finasteride; Minoxidil

INTRODUCTION

Androgenetic alopecia (AA) is one of the common problems in practice of Dermatologists. Minoxidil and finasteride has been used as treatment of these conditions since long. Microneedling for AA is a new addition to the therapeutic armamentarium for AA [1-4]. Microneedling is minimally invasive procedure in which a roller with fine needles is rolled over the skin. We report five cases of AA treated with microneedling along with conventional treatment. All of them showed up with good growth of hair at the end of 3 months. The hair growth was maintained till 3 months on last follow-up for majority and one and half years for one of the case.

CASE REPORT

Five men with AA who had already used conventional treatment (>6 months) with no desired hair growth and wanted to undergo hair restoration without hair transplantation were selected.

Case 1: A 28-year-old male presented with AA since 5 years. He used minoxidil 5% along with finasteride

1 mg/day for more than a year, without desired outcome. On examination, he had grade IV, Hamilton Norwood pattern of hair loss.

Case 2: A 35-year-old male, presented with grade III vertex, Hamilton Norwood pattern of AA. He had used Minoxidil 5% and finasteride but was not satisfied with the outcome even after applying it for more than 8 months. He did not want to undergo hair transplant and wanted an alternative cheaper option of hair restoration.

Case 3: A 28-year-old male presented with grade IV, Hamilton Norwood pattern of AA. He used topical Minoxidil 5% and oral Finasteride 1mg/day for more than a year. He wanted a better result but without undergoing hair transplantation.

Case 4: A 41-year-old male presented with grade V, Hamilton Norwood pattern of AA. He wanted something more than application of topical medicine and oral finasteride but wanted to avoid hair transplantation.

Case 5: A 45-year-old male patient, presented with grade III vertex, Hamilton Norwood pattern of

How to cite this article: Parajuli S, Paudel U. Microneedling for androgenetic alopecia not responding to conventional treatment. Our Dermatol Online. 2020;11(2):140-142.

Submission: 01.11.2019; **Acceptance:** 07.01.2020

DOI: 10.7241/ourd.20202.5

baldness. On giving choice of medical and surgical way of hair restoration, he opted for microneedling along with Minoxidil but without finasteride.

These patients were given a trial of combined Microneedling and conventional treatment after taking informed consent. Patients were subjected to microneedling every week for 3 months with Derma roller of 1.5 mm size along with continuation of 5% Minoxidil solution twice daily application and finasteride 1mg per day orally, except for case no 5 who just received Microneedling and daily topical Minoxidil 5% without oral finasteride.

Topical anaesthesia with mixture of lignocaine and Xylocaine was applied on the scalp one hour before procedure to make the procedure painless. The scalp was clean with normal saline only. Dermal roller of size 1.5 mm was used for microneedling in vertical, horizontal and oblique direction, till pinpoint bleeding was observed on the surface of skin, which was considered as end point of the procedure. After the procedure, normal saline was used to clean the area without application of antibiotic cream. The patient was instructed to use Minoxidil 5% twice daily after 24 hours of the procedure along with oral finasteride 1 mg daily.

The procedure was repeated weekly for 3 months in all patients except for case 4 who continued his treatment till one and half years.

Patients were assessed using standardized 7-point evaluation scale (-3 = greatly decreased, -2 = moderately decreased, -1 = slightly decreased, 0 = no change, +1 = slightly increased, +2 = moderately increased, +3 = greatly increased).

Patients were asked to assess their hair growth on subjective hair growth assessment scale. (0 = no improvement, 1 = 1-25% improvement, 2 = 26-50% improvement, 3 = 51-75% improvement, 4 = 76-100% improvement).

Patients were followed-up for 3- months post procedure. Case 4 was followed up till one and half years with microneedling at the frequency of every 2-3 weeks along with Minoxidil and finasteride.

All patients (Figs. 1 and 2) showed improvement (+2 to +3) on standardized 7-point evaluation scale: All patients, except case 5, were satisfied with treatment



Figure 1: Androgenetic alopecia in patient before treatment.



Figure 2: Androgenetic alopecia in patient after treatment.

improvement score of more than 75% in all the patients. Case 5 reported no improvement. Response to treatment was seen after 10-12 weeks of starting the treatment. Obtained results were sustained post procedure during 3 months follow-up for all patients. Case 5 was followed up for one and half years, and had maintained the results. No complications in terms of infections, or pigmentary changes, or textural changes were noted during the procedure or during the follow-up period.

DISCUSSION

Reports of effectiveness of microneedling have been in rise in recent times. As the people are not getting desired outcomes with use of Minoxidil and finasteride, those patients, who do not want hair restoration surgery have been demanding for another effective treatment. Microneedling has proven as an

effective alternative treatment modality for these types of patients.

The principle of microneedling was first described by Orentreich, who used it for the acne scar. Since then, its use has been extended to other conditions like rhytides, striae distensae, alopecia and others. In androgenetic alopecia, it is supposed to work by stimulation of epidermal growth factor, platelet derived growth factor, hair bulb stem cells and activation of Wnt signaling pathway [5].

Our cases showed moderate to great increase in hair growth without any complications associated with the procedure with exception of one patient. This case series adds to existing literature on beneficial effects of microneedling for AA. Though all the cases, except for case 4, could not be followed for long period of time, the response in case 4 seen at 18 months highlights that the response of hair growth would be maintained if the procedure is continued in intermittent pattern for long period of time.

To conclude, micro needling is one of the effective and cheap therapeutic interventions for AA. This is the first case series reported from Nepal highlighting the effectiveness of microneedling procedure in androgenetic alopecia. Though we see promising results of microneedling in small numbers of cases in our series, a large cohort, and longer follow -up and comparative studies would be required in our population in future for ascertaining real effectiveness of microneedling in AA.

Consent

The examination of the patient was conducted according to the Declaration of Helsinki principles.

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

REFERENCES

1. Dhurat R, Mathapati S. Response to Microneedling treatment in men with androgenetic alopecia who failed to respond to conventional therapy. *Indian J Dermatol.* 2015;60:260-63.
2. Valente Duarte de Sousa IC, Tosti A. New investigational drugs for androgenetic alopecia. *Expert Opin Investig Drugs.* 2013;22:579-89.
3. Kim YS, Jeong KH, Kim JE, Woo YJ, Kim BJ, Kang H. Repeated microneedle stimulation induces enhanced hair growth in a murine model. *Ann Dermatol.* 2016;28:586-92.
4. Dhurat R, Sukesh MS, Avhad G, Dandale A, Pal A, Pund P. A randomized evaluator blinded study of effect of microneedling in androgenetic alopecia. A pilot study. *Int J Trichology.* 2013; 5:6-11.
5. Fertig RM, Gamret AC, Cervantes J, Tosti A. Microneedling for treatment of hair loss? *JEADV.* 2018;32:564-9.

Copyright by Sudip Parajuli, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Source of Support: Nil, **Conflict of Interest:** None declared.