

# Adjuvant treatment of identical twins using autologous micrograft transfer for the treatment of male pattern hair loss

Dr. Chong Boon Liang Joshua  
Terra Medical Clinic, Singapore, Singapore

## ABSTRACT

The pathogenesis of male pattern hair loss, commonly known as androgenetic alopecia (AGA), is thought to be largely due to the result of genetics and androgen-induced hair follicle miniaturisation<sup>1</sup>. Twin studies serve as a model of the relative environmental and genetic influence of a disease or a treatment; they allow checking on the efficacy and safety of a treatment eliminating the interindividual genetic variability influence in the treatment success<sup>2</sup>. Autologous Micrografting for AGA is a novel regenerative technique that has the potential to stop hair loss and increase hair thickness in miniaturised hair follicles<sup>3</sup>. Here we present a case of identical twins with AGA to assess the efficacy of this novel treatment taking out of the equation the influence of genetic differences on the results and see whether including autologous micrografting in the typical treatment path is beneficial. The twins underwent different treatment protocols, one including autologous micrografting and the other not. Follow-up results at 4 and 12 months show a significant improvement in scalp coverage over all areas in the twin that included autologous micrografting in his treatment regimen compared to his brother.

## CASE DESCRIPTION

Patients were two Chinese male twins aged 30 in a similar stage of male pattern hair loss – Norwood-Hamilton 3V. They presented a 2-3 years history of gradual thinning of the hair across the hairline, frontal forelock, mid-scalp and crown. The most prominent areas of hair thinning were self-reported to be at the crown and lateral hairline recession. No previous medical treatment was sought. (Figure 1A, 1C, 1E, 1G)

Trichoscopic analysis showed a ~80% of hair miniaturisation rate in both twins.

## TREATMENT PLAN

**Twin A (control):** treated with compounded oral finasteride 0.5mg and oral minoxidil 1mg for 4 months after monitoring for side effects for the initial 1 month.

**Twin B (case):** treated with compounded oral finasteride 0.5mg and oral minoxidil 1mg for 4 months after monitoring for side effects for the initial 1 month and concurrent Autologous Micrografting (1 procedure) to the forelock, mid-scalp and vertex region.

Both twins then continued the same regimen of oral medication for 1 year.

**Figure 1.**  
Parietal and frontal views of the scalp before and after the treatments.

Images A, B, E and F correspond to twin A (control), who underwent a treatment of only oral finasteride and minoxidil for 1 year; Image A shows the state of the parietal scalp, while Image E shows the state of the frontal scalp, both before the treatment. Image B and F show the result of the treatment after 4 months. Images C, D, G and H correspond to twin B (case), who underwent the same treatment as control but including an Autologous Micrografts transfer. Results show an effective result in both twins, with a significantly superior result in the case twin, with a better a greater scalp coverage and apparent hair density in the vertex and frontal areas that the only-pharmacological regimen failed to achieve in his twin brother.

WITHOUT AUTOLOGOUS MICROGRAFTING

WITH AUTOLOGOUS MICROGRAFTING



## RESULTS

Clinical review of both twins in the 4th month after initiation of treatment demonstrated that while the control twin had modest improvement in scalp coverage, the treatment twin managed to achieve significantly better scalp coverage than the control twin. Clinical follow-up at 12 months post-procedure shows that the treatment twin has retained the effects of the adjuvant autologous micrograft transfer, compared to the control twin. There were no side effects reported by either twin. (Figure 1B, 1D, 1F, 1H).

## CONCLUSION

Including Autologous Micrografting in a classic treatment regimen of minoxidil + finasteride has shown improved results in a significant and observable scale after 4- and 12-months follow-up, consistently with the published literature. The efficacy of Autologous Micrografting in AGA has been previously reported by numerous clinical studies that conclude an improvement in AGA increasing hair thickness, stopping hair loss and improving several AGA parameters both in males and females<sup>3</sup>. This is the first case report using identical twins, i.e. patients with the same genetic influence, showing how autologous micrografting poses a significant and possibly future first-line option to treat AGA in combination with well-established therapies.

## BIBLIOGRAPHY

1. Ralph M Trüeb (2002). *Molecular mechanisms of androgenetic alopecia*, 37(8-9), 981-990.
2. Lauschke, Volker M.; Ingelman-Sundberg, Magnus (2019). *Prediction of drug response and adverse drug reactions: From twin studies to Next Generation Sequencing*. *European Journal of Pharmaceutical Sciences*, 130(1), 65-77.
3. Zari S. (2021). *Short-Term Efficacy of Autologous Cellular Micrografts in Male and Female Androgenetic Alopecia: A Retrospective Cohort Study*. *Clinical, Cosmetic and Investigational Dermatology*, 14, 1725-1736.