

Hair loss at injection sites of mesotherapy for alopecia

Mohamed EL-Komy MD¹ | Akmal Hassan MD¹ |
Amira Tawdy MD¹ | Mohamed Solimon MD² |
Mohamed Abdel Hady MD¹

¹Faculty of Medicine, Cairo University,
Cairo, Egypt

²National Institute of Laser Enhanced
Sciences, Cairo University, Cairo, Egypt

Correspondence

Mohamed Hussein Medhat EL-Komy,
Faculty of Medicine, Cairo University, Cairo,
Egypt.

Email: mkomy@hotmail.com

Summary

Background: The side effects of mesotherapy for treatment of various forms of alopecia are often underreported, while scientific data for its efficacy are severely lacking.

Objective: To demonstrate the late onset side effects of mesotherapy for alopecia.

Methods: Three patients with androgenetic alopecia showed hair loss after previously uneventful mesotherapy sessions up to 1 year.

Results: Clinical, dermoscopic, and histopathological findings suggested an inflammatory scarring process at sites of mesotherapy injections.

Conclusion: Mesotherapy for androgenetic alopecia may paradoxically induce hair loss and scarring. Proper regulation and monitoring of the use of mesotherapy products for treating hair loss in women, needs to be addressed.

KEYWORDS

alopecia, complications, female pattern hair loss, mesotherapy

1 | INTRODUCTION

Mesotherapy is a minimally invasive technique that involves limited intradermal injection of pharmaceutical and/or non-pharmaceutical substances¹ for medical or cosmetic purposes.

Despite the lack of sufficient data as to the value of using mesotherapy for the treatment of hair loss, this procedure is widespread and very popular among patients and physicians. In this study, we report 3 cases that developed patchy hair loss at sites of mesotherapy injections for scalp alopecia.

2 | CASE SERIES

2.1 | Case 1

A 30-year-old female patient with Sinclair grade III androgenetic alopecia presented with 5 circumscribed tender patches of hair loss on her frontal scalp (Figure 1). The patient received five sessions of mesotherapy cocktail containing 2 mL dutasteride 0.005% (Mesologica) and 3 mL of Insulin-like Growth Factor-1 (IGF-1), basic Fibroblast Growth Factor (bfGf), Vascular Endothelial Growth Factor

(VEGF), Copper Tripeptide-1, Multi-vitamins, Amino acids and Minerals (Mesologica MRS Hair). The lesions developed 1 week after her last session which was intolerably painful that the patient could not continue the session.

Clinically, the lesions were slightly erythematous, partially devoid of hair and smooth with no sign of scalp thinning or atrophy. Dermoscopy revealed multiple white dots, marked decrease in follicular openings, perifollicular and interfollicular mild scaling and several vellus hairs.

The patient was seen after 5 month of presentation with slight improvement in hair density after using minoxidil 5% solution.

2.2 | Case 2

The second patient was a 29-year-old woman with Sinclair grade II androgenetic alopecia who presented with a single tender, erythematous and crusted plaque with decreased hair density on the frontal scalp (Figure 2) after approximately 1 year of monthly uncomplicated mesotherapy injections containing 2 mL dutasteride 0.005% (Mesologica) and 3 mL of Insulin-like Growth Factor-1 (IGF-1), basic Fibroblast Growth Factor (bfGf), Vascular Endothelial Growth Factor

(VEGF), Copper Tripeptide-1, Multi-vitamins, Amino acids, and Minerals (Mesologica MRS Hair). Again, this patient reported severe pain at her last session followed by edema, erythema, oozing, crusting, and hair loss.

Dermoscopic findings included yellow dots, follicular plugging, white and erythematous patches, perifollicular- and interfollicular scaling, several vellus hairs and decreased follicular openings. Follow-up of the lesions at 8 month showed no erythema or crustations, slight atrophy, but no hair regrowth. The patient was not prescribed Minoxidil as she gave history of allergic reaction to the preparation.

2.3 | Case 3

The last case was a 34-year-old woman with Sinclair grade I androgenetic alopecia. She received three sessions of an unknown mesotherapy cocktail, after a painful 3rd session, she developed 2 linear erythematous depressed atrophic scars with almost complete loss of hair (Figure 3).

Dermoscopic findings included diffuse erythema with white patches, mild perifollicular and interfollicular scaling, grayish white

dots, several vellus hairs, arborizing and giant capillaries with decreased follicular openings.

The patient approved to have a skin biopsy of her lesion and the histopathological features revealed a normally looking epidermis, reduced number of the hair follicles with most of the present hair follicles at the catagen and telogen stages with hyperplasia of the associated sebaceous glands. Sparse perivascular and perifollicular lymphohistocytic infiltrate in the papillary and mid-dermis with thickening of the perifollicular collagen fibers (Figure 4).

Intralesional saline injections were performed twice at affected area and the patient was prescribed Melatonin topical solution with a very good response at 3 month follow-up.



FIGURE 1 Multiple patches of alopecia at mesotherapy injection sites

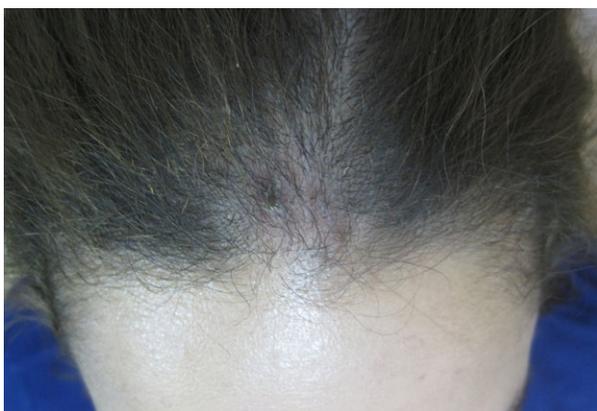


FIGURE 2 Crusted erythematous alopecia at the site of mesotherapy injection



FIGURE 3 Atrophic erythematous alopecia at mesotherapy injection site

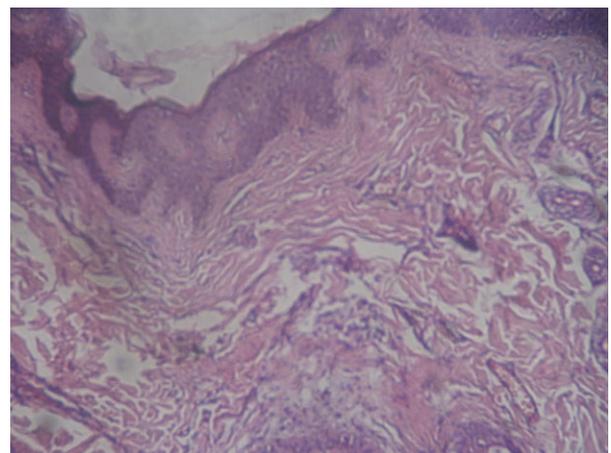


FIGURE 4 Normally looking epidermis, marked reduction of the number of hair follicles and increased thickening of the collagen fibers. Mild perifollicular lymphohistocytic infiltrate. (H&E original magnification $\times 40$)

3 | DISCUSSION

Although multiple side effects with its use have been reported,^{2,3} mesotherapy has been utilized as a treatment for androgenetic alopecia and hair loss in general.⁴

Our three cases presented with erythematous patches and alopecia similar to the previous 2 cases described by *Duque-Estrada* et al.⁴ In addition, we observed crust formation in case 2 and a significant depression of the affected area in case 3.

Although dermoscopic findings were not precisely similar in the 3 patients, they all shared increased vellus hair counts in the affected areas, scaling, as well as a marked decrease in follicular openings, denoting the presence of scarring.

The histopathological findings in the only patient we could biopsy were comparable to the findings described by *Duque-Estrada* et al.,⁴ however, we also observed a perivascular and perifollicular lymphohistocytic infiltrate with hyperplasia of the associated sebaceous glands and thickening of the perifollicular collagen fibers suggesting an inflammatory scarring process.

Acute complications of mesotherapy for the treatment of hair loss have been previously reported to cause cicatricial alopecia and scalp abscesses.^{3,4} Interestingly, the complications we observed occurred after several previous eventless mesotherapy injections for up to 1 year for patient 2. Except for the uncertain patient 3, the 2 other patients were receiving the same type of cocktail for the whole treatment period by the same physician. Together with the history of severe pain at their last session, it may be speculated that such complications may have been a result of a delayed cutaneous reaction to mesotherapy or an acute reaction to manufacturing changes in composition of the injected solution.

Mesotherapy products are not regulated in many parts of the world. Moreover, the Federal drug administration (FDA), USA, has not approved this method of treatment.⁵ Moreover, our patients did not report significant improvement in their condition even in patient 2 who received 12 injections of mesotherapy. The presented cases are an example of a delayed onset of complications associated with mesotherapy injections for hair loss.

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