Hirsutism Induced by Facial Autologous Fat Grafting

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Established Facts

- Autologous fat grafting (AFG) is an established technique used for aesthetic purposes, including facial rejuvenation.
- The procedure is considered safe, with only mild and uncommon side effects.

Novel Insights

- We report on a patient who developed hirsutism 1 month following facial AFG.
- This is the first report on hirsutism following AFG, which might be mediated by the secretion of growth factors from the graft.

Keywords

Autologous fat injection · Hirsutism · Hair

Abstract

Autologous fat grafting (AFG) is a common procedure, which gains popularity for a large number of indications, mainly for reshaping and filling of contour defects. It is considered a safe procedure, with only uncommon and mild complications. Here we report on a 60-year-old female patient who developed excess hair growth on both cheeks 1 month following facial AFG done in conjunction with a facelift. Complete endocrine evaluation was within normal levels. Previous reports have suggested that adipocyte mesenchymal

stem cells can secrete a number of growth factors, which in turn can lead to activation of stem cells in the hair follicle, affecting their growth. However, to the best of our knowledge, this is the first report on hirsutism as a side effect of AFG.

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Introduction

Autologous fat grafting (AFG) is a technique used for reshaping and filling of contour defects [1]. Its use has been gaining popularity in the last 30 years, and it is currently being used for a large number of indications, including hand, facial, and breast rejuvenation, correction

Fig. 1. Excess hair growth on the cheeks of the patient, as observed 4 months following autologous fat grafting.

of photoaging, treatment of atrophy of the plantar fat pad, improvement of hyperpigmentation, and scar tissue softening [2]. AFG is considered a safe procedure utilizing autologous material and not foreign material, with minimal scarring at the injection site and a low incidence of side effects [2]. Nevertheless, complications have been observed with this technique, with a complication rate of approximately 6% when AFG is used for facial rejuvenation. Complications are mostly mild in severity and can include hematoma/ecchymosis, fat necrosis/oil cysts, scars, swelling, and irregular distribution of fat. Infections are reported more rarely [3], and fat necrosis and blindness and stroke have been reported but are extremely rare. Here we report on a patient that developed diffuse hirsutism in the vicinity of the fat injections, a complication that, to the best of our knowledge, has not been reported before.

Case Report

A 60-year-old female presented to the department of dermatology 4 months following a facelift surgery that was accompanied by an AFG to both cheeks. The surgery and the fat injection went without any apparent side effects, and post-surgery follow-up was normal. One month following the procedure, the patient noticed excess hair growth on both cheeks, in the vicinity of the fat injections. The patient denied excess hair growth in any other location or any related symptoms. A complete endocrine panel did not reveal any sex hormone abnormalities. The patient was in general good health, except for osteoporosis, treated periodically with denosumab. Examination revealed slight hyperpigmentation disseminated symmetrically on both cheeks, covered by a combination of vellus and black and white terminal hairs (Fig. 1).

Discussion

Although most of the literature on fat grafting discusses its potential use on skin rejuvenation and as a filling material, it has been reported that fat injection can also affect the hair follicle. Most of these effects have been attributed to the presence of adipocyte mesenchymal stem cells, which can lead to activation of the stem cells in the hair follicle, resulting in regeneration of the hair follicle [4]. This is presumably achieved by the secretion of growth factors that can lead to paracrine effects on cells in their vicinity [5]. Indeed, conditioned medium of adipose tissue-derived stem cells have been shown to promote hair growth in vitro [6, 7]. Based on these in vitro studies, conditioned medium of adipose tissue-derived stem cells has been used for the treatment of female pattern hair loss, with favorable results [8]. Enriched adipose tissue has also been found to be effective in a series of patients with male pattern baldness and female pattern hair loss [9]. There are also reports on the use of fat grafting for inducing hair regrowth in a patient with atrophic scarring alopecia and in a patient with scleroderma-induced atrophic alopecia [10, 11].

To our knowledge, although there is a theoretical basis for hair growth-promoting effects of AFG, this is the first report on hirsutism as a complication of AFG when used for facial rejuvenation. This may be the result of underreporting of this complication, and increased awareness by treating physicians for this possibly rare side effect is needed. Further studies on the possible effects of AFG on hair growth and the hair follicle stem cells will help decipher the exact mechanism that underlies these effects.

Statement of Ethics

Written consent was obtained from the patient.

Disclosure Statement

The authors have no conflicts of interest to disclose.

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