Dermatology Practical & Conceptual

Triamcinolone Injection in the Treatment of Malar Edema

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ABSTRACT

Introduction: Tear-through deformities can be a detectable sign of facial aging. Over recent years, minimally invasive procedures such as hyaluronic acid filler injections have been shown to be effective in improving this area. Malar edema is the accumulation of fluid over the malar eminence persisting for 1 month or more. Given its nature, the management remains problematic. The most commonly reported treatment modality is injection with hyaluronidase.

Objectives: To determine the safety and efficacy of triamcinolone injection in the treatment of malar edema.

Methods: A total of 15 female patients with malar edema, with a mean age of 43.77 years, were treated with triamcinolone injections. The volume injected was chosen by the investigator. Prior to the triamcinolone injection, all patients had been treated with hyaluronidase, which turned out to be ineffective in all cases. Patients were asked to note all adverse effects.

Results: Satisfactory results were achieved after a single treatment session for 14 patients and after two treatments for one patient. Overall, injections with triamcinolone were well tolerated and no adverse reactions were reported.

Conclusions: Injection with triamcinolone appears to be a safe and effective option for the management of malar edema following hyaluronic acid filler injection. Nevertheless, further research with larger patient groups is compulsory.

Introduction

Tear-through deformities can be a detectable sign of facial aging; hence, rejuvenation of this area is essential to restore a more refreshed and youthful appearance. Over recent years, minimally invasive procedures such as hyaluronic acid (HA) filler injections have been shown to be effective in improving this area. Yet with the tear trough being recognized as the most challenging area to treat with HA filler and the spectrum of complications, such as swelling, bruising, Tyndall effect, or malar edema, it may pose a challenge especially when performed without proper precaution.

Malar edema is the accumulation of fluid over the malar eminence persisting for 1 month or more. It has been reported with an incidence between 11%-25% of tear trough filler treatments [1,2]. The underlying cause of malar edema after dermal filler injection is most likely due to a band of connective tissue, called a malar septum, which divides the superficial suborbicularis oculi fat into a superficial and deep compartment. Although the lymphatic drainage of the deep compartment is contiguous with the cheek drainage, the superficial compartment lymphatic drainage is compromised [3]. This complication is proposed to be multifaced and related to the depth of injection, the volume injected, the patient degree of preprocedural lymphatic obstruction, and the physical qualities of the injectate [4]. Given its nature, the management of malar edema remains problematic. The most commonly reported treatment modality is injection with hyaluronidase nonetheless, in clinical practice it has not proven to be effective in all cases thus new therapeutic options are emerging [5,6].

Triamcinolone is a corticosteroid widely used in dermatology for a variety of conditions, including keloids, hypertrophic scars, alopecia areata, granuloma annulare, or acne [7-10]. Regardless of its common use, the availability of reliable guidelines is still lacking.

Objectives

The aim of this study is to report 15 cases with malar edema post tear-trough augmentation successfully treated with triamcinolone injection and to determine the safety and efficacy of triamcinolone injection in the treatment of malar edema.

Methods

A total of 15 female Caucasian patients, with a mean age of 43.77 years (range, 35-56 years), presented to our clinics in Poland complaining of malar edema. All 15 patients presented with bilateral edema following tear-trough augmentation with hyaluronic acid, with no signs of erythema, soft and not tender to the touch. Duration of the last filler injection varied from 1 month to 1.5 years before experiencing the edema. The injections were performed by dermatologists or beauticians in different clinics. Patients injected by a beautician were unaware of the amounts, nor the brand of the injected filler. Various brands of fillers were applied among patients injected by dermatologists. Demographic and clinical data, including comorbidities and previous procedures, have been collected. No patient had any history of previous lower eyelid blepharoplasty, allergies, chronic malar edema of unknown origin, infection, or thyroid disease. None of the patients were injected with permanent fillers before. Prior to treatment, patients were subjected to a brief general examination including an ultrasound examination performed by a trained practitioner. Each examination revealed subcutaneous tissue edema with no filler residue, and no granulomas.

Each patient was treated by triamcinolone injection per side directly into edema with cannula retrograde under ultrasound. The volume injected was chosen by the investigator (10 mg/1mL, 0.5 mL per each side with a TSK 25G 38 mm cannula). Patients were asked to note all adverse effects. Prior to the triamcinolone injection, all patients had been treated with hyaluronidase, which turned out to be ineffective in all cases. Different kinds and volumes of hyaluronidase were used by the injectors who performed tear trough treatment with HA and the authors have no knowledge regarding the used products nor amounts. Photographs were obtained at the baseline before every treatment session, after one week from the triamcinolone injection for evaluation of treatment response, and after additional 3 months for follow-up. Moreover, the evaluation of the subject general health was performed during each visit.

Results

The treatment response was evaluated by 2 independent practitioners after 1 week of the triamcinolone injection. Satisfactory results in the form of edema reduction were achieved after a single treatment session for fourteen patients and after two treatments for one patient. Overall, injections with triamcinolone were well tolerated and no signs of edema could be detected after the product administration. No cases of skin atrophy, hypopigmentation, or necrosis were observed. Any other adverse reactions were also not reported. At the 3-month follow-up, all patients remained asymptomatic and full resolution of edema was maintained. All 15 patients reported high satisfaction with the treatment applied which was evaluated using a questionnaire prepared for the purpose of this study (Figure 1).

Figure 1. The results of the treatment with triamcinolone injections.

Conclusions

Fillers with hyaluronic acid have become one of the most popular nonsurgical facial treatments for the infraorbital area. There is a growing awareness of the vascular risks associated with HA-based filler injections that can result in blindness. Nonetheless, the use of such fillers in the infraorbital region should generally be considered as safe. The data regarding late complications (2–4 weeks or longer post-injection) of HA fillers is rather sparse, which could be a result of both low incidence and the fact that most complications can be treated relatively easy, the second of which may result in a lack of reporting. Malar edema tends to occur days to weeks after injection however, it has also been reported to arise several years post-injection [11]. Although malar edema can be somewhat mitigated, such complication cannot be fully eluded.

The underlying cause of malar edema is yet to be fully elucidated, since various theories have been proposed. Due to the rather impenetrable malar septum which divides the superficial sub-orbicularis oculi fat into a superficial and deep compartment, the tear trough region is specifically prone to edema. When injected too superficial to the malar septum, dermal fillers may hinder lymphatic drainage and result in malar edema. On the other hand, deeper injections, especially with a high water affinity filler or with too great of a volume, may give rise to direct compression of the lymphatic vessels. What is more, the hypothesis has been given that at particular risk for developing edema are patients burdened with allergies, rosacea, or preexisting malar edema however, it has not been confirmed [11]. In order to reduce the incidence of malar edema, adequate filler, and patient selection, limiting filler volume, and placing the product deep into the malar septum are generally advised [12,13].

Since its first introduction in 1961, intralesional injection with corticosteroids has been an important part of dermatological treatment [14]. Intralesional injections are found to be useful for a variety of indications, are simple to administer, and are relatively safe. The aim behind intralesional therapy is to inject medicine directly into a particular skin region in order to treat local tissues while having minimal systemic effects. One of the most widely injected corticosteroids is triamcinolone. Due to its known, anti-angiogenic, anti-inflammatory, anti-proliferative, and

especially anti-edematous effects, triamcinolone has great potential in the treatment of malar edema [15-17]. Although the administration of triamcinolone has multiple benefits, it is not without ramifications. Among the most common side effects atrophy, telangiectasia, and hypopigmentation can be distinguished, thus it is of high importance to be aware of the occurrence of such events [18]. It is of high importance to use a proper dilution and a minimal amount to achieve satisfactory results.

A study by Siperstein et al discussed the use of triamcinolone in the infraorbital region in aesthetic medicine when 1 mg of triamcinolone was mixed with a 1-cc syringe of hyaluronic acid filler for the prevention of the post-injection swelling, not in the treatment of malar edema [19] Furthermore, in 2022, Siperstein proposed triamcinolone for the treatment of mild-long term or delayed onset swelling in a dose of 0.1 mL of 2.5 mg/mL triamcinolone with a cannula in each area [20]. Nonetheless, the author suggests triamcinolone being effective only for 2-6 weeks before the edema returns. In our analysis, the patients did not improve after the previous treatment with hyaluronidase nonetheless, all responded to the triamcinolone alone which proved to be effective for the period of 12 weeks at the follow-up.

According to our observations, injection with triamcinolone is a safe and effective option for the management of malar edema following hyaluronic acid filler injection. Nonetheless, further research with larger patient groups is needed to validate our results and to establish the most effective and safe concentration of triamcinolone injection.

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