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Dramatic Improvement of Long Lasting Post-Inflammatory Hyperpigmentation by Oral and Topical Tranexamic Acid

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ABSTRACT

Post-inflammatory hyperpigmentation is common problem, but its treatment still remains challenging. Tranexamic acid has been used to treat or prevent excessive bleeding loss in various medical conditions. There have been some reports of the effect of oral and topical tranexamic acid for treatment of pigmented disorder. Herein we report on a case of female patient who showed improvement of PIH after oral and topical tranexamic acid administration.

Keywords: Post-Inflammatory Hyperpigmentation; Tranexamic Acid

1. Introduction

Post-inflammatory hyperpigmentation (PIH) is a common cosmetic problem occurring after dermatologic laser procedures. Various treatments have been used for PIH, although none of the existing therapies has an entirely satisfactory outcome [1].

Topical trans-4-amino-methylcyclohexanecarboxylic acid (tranexamic acid [TA]) is currently being used to treat hyperpigmentation such as melasma [2]. There have been several reports regarding the improvement of hyperpigmentation after oral or intradermal administration of TA [3]. We present the case of a female patient who showed dramatic improvement of her PIH 2 weeks after oral and topical TA administration

2. Case Report

A 37-year-old woman presented with dark brownish hyperpigmentation on both malar areas of two months' duration due to IPL in a local clinic. Following her initial treatment, she was treated using a low fluence QS 1064 nm, however, the PIH was darkened. Skin examination showed irregular-shaped, brown-colored patches in both sub-malar areas (**Figure 1**). The patient was otherwise healthy, and routine laboratory investigations were within normal ranges. There was no family history of coronary heart disease or coagulopathy. We initiated oral TA 250 mg tid per a day. A wet dressing using TA solution (3 ampoules, total 15 ml of Tranexamic Acid® (500 mg/5 ml), Shinpoong Pham., Korea) was applied for 20 minutes three times a week. Burning sensation and erythema subside quickly. After two weeks of treatment, her facial lesions improved significantly and only mildly pinkish skin patches remained (**Figure 2**).

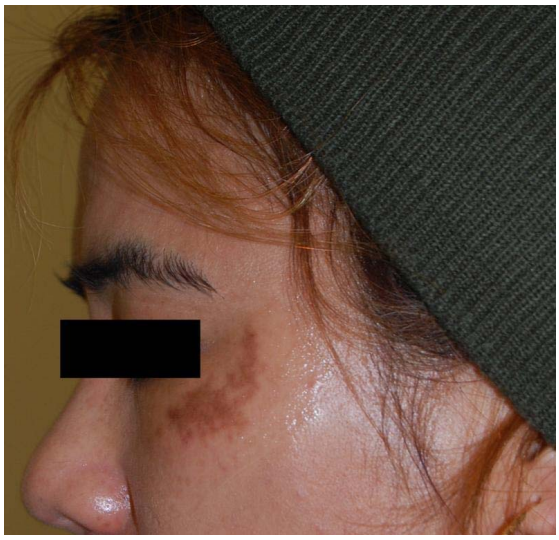

Figure 1. Initial visit; Localized brown colored patches at both sub-malar area.

3. Discussion

TA has been used via internal administration to treat abnormal bleeding as well as skin diseases such as eczema, hives, drug-induced irritation, and toxicodermia via internal administration [4], and also orally to treat skin

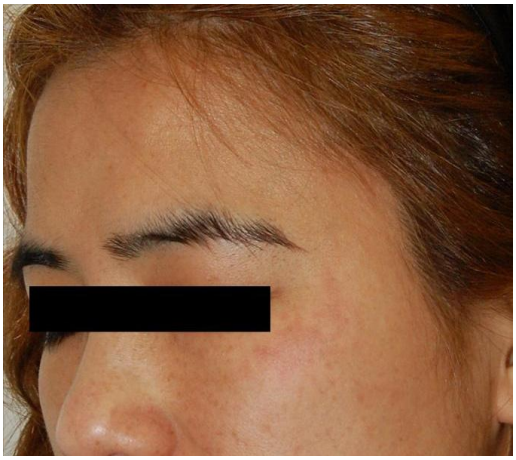

Figure 2. After 3 weeks of treatment, her facial lesions were disappeared.

itching, swelling, and erythema [5]. Recently, several reports verified the improvement of melasma after oral or intradermal TA administration [2,3]. It is thought that plasmin promotes melanin synthesis via melanocyte-keratinocyte interactions. TA prevents the conversion of plasminogen to plasmin by the inhibiting plasminogen activator action through the formation of a reversible complex with plasminogen [5].

As it has been demonstrated that TA may cause skin irritation as well as allergic reactions, a novel topical TA liposome formulation was developed in order to reduce irritation and improve the moisturizing effect, although it is not yet commercially available [6]. We used easy, non-cost method of soaking using tranexamic acid solution.

Treatment of PIH is difficult and still remains challenging. Many topical medications, including keratotics, retinoids, corticosteroids, and depigmenting agents, as well as chemical peels and several types of laser treatment have been used [1]. However, as none of them can completely clear a lesion, many novel treatment agents have recently been used for treatment.

To date, there have been few clinical reports regarding the cutaneous whitening effects of oral and topical TA for PIH. We report that oral and topical TA administration could reduce PIH quickly. Patients with no other problems may benefit from oral TA administration and the wet dressing with TA is a simple, comfortable, and low-cost treatment.

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