

COSMETIC DERMATOLOGY

Chemo-Inflammation-An Effective Treatment for Freckles

JS Pasricha, Pascal D Souza, Apra Sood, Anjali Jhingan

Freckles are fairly common and considered to be incurable. We have developed a new technique called "Chemo-inflammation" with which we have treated 5 patients (4 girls and one boy) having extensive freckles with excellent results. All the freckles disappeared completely from the treated areas and there has been no recurrence so far.

The technique consists of applying a liquid based on an alkyl sulphate, on the affected skin and repeating the application every hour for a day till the entire skin develops adequate inflammation. The liquid is then washed off with tap water and the skin is treated with topical (or systemic) corticosteroids till the inflammation subsides and the treated skin peels off and attains its normal texture. This generally happens within a week or so. Post-inflammatory hyperpigmentation has to be prevented by adequate anti-inflammatory treatment. Otherwise there are no precautions.

Key words: Freckles, Chemo-inflammation, Treatment

Introduction

Freckles are fairly common among the Indians but so far there has been no satisfactory treatment. Generally, the patient is advised to avoid exposures to sunlight and apply topical sunscreens during the day and hydroquinone with or without topical corticosteroids and tretinoin at night. As a rule however, the effect of this treatment is negligible.¹

A few years ago, we treated a patient having multiple lentigenes on the face with controlled superficial electrocoagulation with an extremely satisfactory result. All the lesions had disappeared without leaving any scars. A few months later, a young girl having freckles on the face was also treated in the same manner with a similar result. The next patient however, reporting to us for the treatment of freckles had too many lesions which could not be treated with electrocoagulation. For this patient therefore, we adopted a different approach called chemo-inflammation, designed by us for the treatment of post-acne scars. The result was equally gratifying. We have subsequently treated a total of five patients, which are described below.

From the Department of Dermatology and Venereology, All India Institute of Medical Sciences, New Delhi- 110029, and the Skin Diseases Centre, I-A, Masjid Moth, New Delhi-110048.

Address correspondence to:

Dr. J S Pasricha, Flat No. 7159, Sector B-10, Vasant Kunj, New Delhi 110070.

Procedure

"Chemo-flame" is a thick liquid containing an alkyl sulphate. It is a weak irritant but when applied repeatedly over a day or so, it induces a severe inflammatory reaction in the skin. The patient is required to apply this liquid over the affected areas every hour till the entire area becomes adequately inflamed. This generally happens in a day or so. At this stage, further applications of the chemo-flame liquid are stopped and the agent is washed off with plenty of tap water. The area is then treated with topical applications of a corticosteroid cream (usually 0.05% clobetasol propionate) 3-4 times a day till the inflammation subsides completely and the chemo-inflamed skin peels off. This generally happens within a week or so. Subsequently, the patient is advised to continue topical applications of the corticosteroid twice a day and 5% hydroquinone 3-4 times a day for a month or so to prevent post-inflammatory hyperpigmentation. There are no other precautions, the patient is rather encouraged to wash her face with normal soap and continue the routine daily activities.

Case Reports

Case 1, 2 and 3: The first three patients belonged to the same family, two sisters and one brother, all of them between 20-25 years in age. They had extensive freckles on their face and upper back and a few scattered lesions on other parts of the body. Most of the lesions were situated on the

sun-exposed areas only but there was no history of photophobia, or acute photosensitivity. The lesions had started appearing at about 3-5 years of age and had progressively increased with time. Prior treatments had been ineffective. The eldest sister was treated with chemo-inflammation first, and the result was good. Adequate inflammation was obtained on the second day and the skin returned to normal appearance within 7 days. Most of the freckles had disappeared but the lesions around the eyes and the eyelids and those on the upper back persisted because she had not applied the chemo-flame on these areas. After one month, she was advised to repeat chemo-inflammation of the remaining areas of the face including the eyelids, which led to complete disappearance of all the lesions on the face. There were no complications or residual effects, and there has been no recurrence of the lesions during a follow up of 1 year.

Feeling encouraged with this achievement, the second sister then opted for the treatment. She obtained a similar response, but developed herpes simplex during the procedure, which was controlled with oral acyclovir. After 1 month, she underwent a second chemo-inflammation for removal of the remaining lesions and again developed recurrence of the herpes simplex. After the second chemo-inflammation her skin cleared completely, and there has been no recurrence since then.

The brother of these girls was the next person treated with the same procedure. His lesions cleared completely with the first application itself and there were no complications.

Case 4: The fourth patient was a 24-year-old girl who had similar extensive freckles but limited almost exclusively to the face, and not responding to any treatment. She underwent chemo-flaming in April 1998 and cleared completely with the very first treatment. There were no complications.

Case 5: The most recent patient was a 23-year-old girl who also had extensive freckles on her face though less than the previous patients. She underwent chemo-inflammation in September 1998, and cleared almost completely with the first treatment itself. A few lesions however escaped complete treatment because the chemo-inflammation was not uniform over the entire face. There were no complications except that the post-inflammatory erythema lasted almost a month and needed treatment with topical lactocalamine lotion.

Discussion

The mechanism of chemo-inflammation is different from chemo-peeling. The agents used for chemo-peeling

include trichloroacetic acid, phenol, glycolic acid etc. which are basically chemo-cauterants and actually destroy the skin. This skin is then replaced by normal skin regenerating from the deeper portions of the cutaneous appendages. In chemo-peeling therefore, it is important to control the depth of cauterization so that it does not lead to scarring.

In chemo-inflammation in contrast, the agent used is an irritant which produces inflammation in the skin and leads to shedding of the skin. There is therefore almost no risk of scarring unless the inflammation is allowed to proceed to ulceration and infection. Adequate supervision is therefore sufficient to prevent scarring.

The major risk in both the procedures however consists of post-inflammatory hyperpigmentation which can occur if the inflammation is allowed to continue for an unnecessarily prolonged period. Intensive treatment with topical and even oral corticosteroids during the first few days, followed by maintenance treatment with only topical corticosteroids combined with topical 5% hydroquinone for a month or so are generally adequate to prevent post-inflammatory hyperpigmentation. In case the patient still develops hyperpigmentation which is generally due to inadequate use of anti-inflammatory treatment, more intensive treatment with topical corticosteroids and hydroquinone is as a rule sufficient to reverse this complication.

Antibiotics, topical or systemic may be used if there is a risk of superadded bacterial infection during the post-treatment period and calamine lotion may be applied if the area shows post-treatment erythema. Otherwise, there are no special precautions. The patient should be encouraged to clean the face with normal soap and resume normal routine activities as early as possible. There is no need for protection from sunlight or to use sunscreens.

In case some lesions do not disappear completely because of inadequate chemo-inflammation, the procedure can be repeated in a month's time as per the convenience of the patient.

None of the patients have developed a recurrence so far, but even if the lesions tend to reappear, the recurrence is expected to be slow and the procedure can be repeated whenever considered necessary.

Reference

1. Mosher DB, Fitzpatrick TB, Hori Y, et al. Disorders of melanocytes, in; *Dermatology in General Medicine*, 4th edn., Editors, Fitzpatrick TB, Eisen AZ, Wolff K, et al, McGraw-Hill, New York; 1993; 968-969.