Rejuvenating facial massage – a bane or boon?

Neena Khanna, MD, and Siddhartha Datta Gupta, MD

From the Departments of Dermatology and Venereology and Pathology, All India Institute of Medical Sciences, New Delhi, India

Correspondence
Neena Khanna, MD
Department of Dermatology and Venereology
All India Institute of Medical Science
New Delhi – 110 029
India
E-mail: msichem@mantraonline.com

Abstract

Background Facial massage is an extremely popular form of beauty treatment and is thought to rejuvenate the skin. We decided to study the benefits and untoward effects of this form of facial beauty treatment.

Methods One hundred and forty-two women (aged 17–63 years), who had received facial beauty treatment in three well-established beauty parlours in New Delhi, were entered into the study and observed for a period of 12 weeks after the facial beauty treatment. Twenty-seven of the subjects had a repeat facial beauty treatment 4–6 weeks after entry into the study, giving a total of 169 massage episodes observed. Immediate and delayed effects of the beauty treatment were examined.

Results Facial beauty treatment generally consists of three steps: vigorous massaging of the face with creams, steaming (using a hot towel or a steaming gadget), and application of a face mask containing adsorbents and astringents. In our study, the creams used for massage included “off the shelf” creams manufactured by standard cosmetic companies in 95 (56.3%) subjects, herbal creams in 61 (36.1%), and creams containing exotic ingredients, such as gold salts, in 13 (7.7%). Sixty-one (36.1%) patients developed erythema and puffiness within 15 min to 2 h after the beauty treatment. This lasted for 2–6 h. Forty-one (24.3%) women underwent the procedure of comedone extraction after steaming. In 12 (7.1%) of these women, persistent erythema was noticed at the site of comedone extraction. Eight (4.7%) women developed mild dermatitis on the face, 2–7 days after the facial beauty treatment. Patch testing with constituents used in the facial beauty treatment was positive in four patients (herbal cream, 1; witch hazel, 1; orange face pack, 1; and gold cream, 1). In 47 (33.1%) subjects, an acneiform eruption was observed 3–10 weeks after the facial beauty treatment (mean, 6.1 ± 3 weeks). Thirteen (27.7%) of these subjects had taken the facial beauty treatment for the first time, whereas 34 (72.3%) developed an acneiform eruption after every facial massage. The predominant lesions were deep-seated nodules, although a few comedones, especially closed ones, were present in some patients. Lesions were always present on the cheeks, an area of focus during the facial massage, and healed with hyperpigmentation. The benefits of facial beauty treatment, as mentioned by the subjects, included a feeling of freshness and rejuvenation in 84 (59.1%), keeping the skin supple in 76 (53.5%), feeling of warmth and tightening of the skin in 71 (50%), and delaying the onset of wrinkles in 21 (14.8%).

Conclusions Although there are several subjective benefits with facial beauty treatment, there may be immediate side-effects, such as erythema and edema, as well as delayed problems, such as dermatitis and acneiform eruption, in about one-third of patients.

Introduction

It is not an uncommon observation that substances applied to the skin for the enhancement of beauty often elicit a response which may actually blemish beauty. The well-established adverse effects of cosmetics include contact dermatitis and pigmentation. Acne cosmética, a predominantly comedonal type of acne, has been described following the prolonged use of foundation creams. Pomade acne has been used to describe a predominantly comedonal eruption on the forehead of Negro men who apply various grooming substances as part of their daily toilet. A more persistent acneiform eruption consisting of deep-seated nodules, following facial beauty treatment, has recently been described.
Facial beauty treatment is a popular treatment undertaken by both women and men to enhance the appearance of the face. The beauty treatment consists of a facial massage with creams, steaming of the massaged face, and application of a face pack. This beauty treatment is often touted as a panacea for several cosmetic defects of facial skin, including acne, chloasma, and wrinkles.

We conducted the present study in an attempt to examine the benefits and adverse effects of facial beauty treatment.

Materials and methods

Subjects

One hundred and forty-two women, who had received facial beauty treatment by trained and experienced cosmetologists at three beauty parlours in New Delhi, India, were entered into the study.

History

The subjects were questioned with regard to the presence of any skin lesions on the face, including a history of acne, chloasma, or eruption, prior to facial treatment, as well as a history of any allergic diathesis, including allergies to any topical agents. Details of the facial beauty treatment were noted: these included the frequency and duration of therapy, the vigorousness of the massage, the types of creams used, the duration of steaming, the nature of the face pack applied, and the duration of application.

Examination and follow-up

The subjects were examined at two-hourly intervals for the first 6 h after beauty treatment. Thereafter, the subjects were examined on alternate days for 6 days and at weekly intervals for a further 11 weeks.

At each examination, the patients were questioned and the face was examined for erythema, swelling, dermatitis, pigmentation, and acneiform eruption. In the eight patients who developed dermatitis, patch testing was performed using the constituents of the facial treatment, i.e. the creams used and the packs applied. In 14 subjects, a biopsy was taken from acneiform lesions. The subjects were also questioned about the beneficial effects of facial beauty treatment on their skin.

Results

A total of 142 women who had undertaken facial massage were enrolled in the study. The ages of the patients ranged from 27 to 63 years (mean, 35.6 ± 11.3 years). Twenty-seven of the subjects repeated the facial beauty treatment 4–6 weeks after entry into the study, giving a total of 169 massage episodes observed.

Facial beauty treatment consists of three steps, and Table 1 shows the components and ingredients used on the subjects in our study. The most frequently used constituents in the exotic creams were gold salts (in seven subjects). The adsorbent most commonly used in face packs was fuller’s earth and was employed in 79 (46.7%) subjects. Astringent face packs frequently employed fruit juice or witch hazel. Forty-one (24.3%) of the women underwent the procedure of comedone extraction after steaming of the face. This procedure entails “expressing out” of the comedones by applying circumferential pressure using a comedone extractor. All of these subjects had been given their facial treatment at the same beauty salon; the other two salons had dispensed with the procedure of comedone extraction.

Table 2 shows the side-effects seen after facial beauty treatment. Sixty-one (36.1%) patients developed erythema and puffiness of the face, 15 min to 2 h after beauty treatment and the erythema lasted for 2 h. This was associated with a feeling of warmth and the subjects noticed a glow on their face. Twelve (7.1%) women had a more persistent erythema of the face, particularly around the nose and nasolabial folds. All of these women had undergone comedone extraction using a comedone extractor. Most of these subjects had been given their facial treatment at the same beauty salon; the other two salons had dispensed with the procedure of comedone extraction.

Eight (4.7%) women developed mild dermatitis, in the form of erythema and mild exudation, 2–7 days after the facial beauty treatment. All eight women were patch tested with the constituents of the facial treatment, i.e. the creams used and the packs applied. Patch tests were positive in four
Figure 1 Cheeks showing papules and deep-seated nodules and hyperpigmentation

(50%) of the eight patients patch tested. One patient each was positive to herbal cream, witch hazel, orange face pack, and cream with gold salts.

Forty-seven (33.1%) subjects developed an acneiform eruption 3–10 weeks (mean, 6.1) after the facial treatment. Thirteen (27.7%) of these subjects had taken the facial beauty treatment for the first time, whereas 54 (72.3%) gave a history of the development of an acneiform eruption after every facial massage, although not every episode was similar in severity. The predominant lesions seen were deep-seated nodules, although a few comedones, especially closed ones, were present in some patients (Fig. 1). The comedones, when present, were scattered. The prominent black heads of acne vulgaris were conspicuously absent. Most lesions took a long time to heal and, on healing, left behind residual hyperpigmentation even after therapy. Lesions were always present on the cheeks, an area of focus during beauty treatment. Biopsy, performed in 14 patients, revealed a dermal lymphohistiocytic, perifollicular infiltrate with polymorphs being the predominant cell. A granulomatous response was seen in six (42.9%) of the biopsies.

The benefits of facial beauty treatment, as mentioned by the subjects, included a feeling of freshness and rejuvenation in 84 (59.1%), keeping the skin supple in 76 (53.5%), feeling of warmth and tightening of the skin in 71 (50%), and a subjective delaying of the onset of wrinkles in 21 (14.8%).

Discussion

Numerous methods have been used to enhance beauty, some techniques being scientific with others less logical. Facial beauty treatment is one such popular method which has been used from time immemorial to improve the quality of facial skin. It has often been touted as a panacea for all ills of the face, be they cosmetic or otherwise. Facial treatment generally consists of three steps: massaging of the face with creams, steaming (a step sometimes dispensed with), and application of a face pack. Several modifications, some standard, others extemporaneous, have been devised depending on the need of the client, her (sometimes his!) pocket, and the latest “fad.”

The first step generally consists of massaging of the face, alternatively vigorously and gently, with liberal amounts of cream. The movements of massage include effleurage, petrissage, and tapotement. The creams used may be standard creams available “off the shelf” at departmental stores, or creams containing expensive, often exotic, ingredients, such as gold salts, herbs, and aromatic oils. Great attention is paid to the massage of the cheeks. After the massage, the face is steamed using a hot towel or a steaming gadget. This is followed by application of a face pack containing adsorbents and astringents: fuller’s earth, kaolin, certain herbal additives, egg, witch hazel, etc.

There is a paucity of data on the beneficial and adverse effects of this modality of beauty treatment. The cream massage is thought to increase the supply of blood to the facial skin, assisting in keeping the skin supple, preventing premature aging due to external factors, and delaying the appearance of wrinkles produced by the loss of epidermal elasticity and subcutaneous moisture. The present Vogue of applying face packs has been attributed to a combination of the psychological and cleansing effects of the face pack. The warmth and tightening resulting from application produces a sensation of rejuvenation of the facial skin, whilst the colloidal and adsorptive clays and earths which are present in some of the packs absorb skin debris, grease, and dirt. There is, however, some debate on whether manual massage alters the blood flow of deeper tissue. There is a paucity of data on the beneficial and adverse effects of this modality of beauty treatment. The cream massage is thought to increase the supply of blood to the facial skin, assisting in keeping the skin supple, preventing premature aging due to external factors, and delaying the appearance of wrinkles produced by the loss of epidermal elasticity and subcutaneous moisture. The present Vogue of applying face packs has been attributed to a combination of the psychological and cleansing effects of the face pack. The warmth and tightening resulting from application produces a sensation of rejuvenation of the facial skin, whilst the colloidal and adsorptive clays and earths which are present in some of the packs absorb skin debris, grease, and dirt.

The benefits of facial beauty treatment, as mentioned by more than one-half of the subjects in the present study, included a feeling of freshness and rejuvenation of the skin, enhancement of the suppleness and tightening of the face, and a subjective delay in the onset of wrinkles. We, however, did not quantify these changes. In a study on the beneficial effects of facial massage on aging skin in 36 subjects, Iida and Noro reported a significant recovery of the diminishing elasticity of the skin in the group of subjects over 30 years, whose skin was showing evidence of more than normal aging. In another study, it was shown that the beneficial effects of massage may also be seen in tissues remote from the area of treatment. These effects are mediated by neural reflexes that cause an increase in blood flow. This increased blood flow is related to vasodilatation, possibly related to the release of substance P. There is, however, some debate on whether manual massage alters the blood flow of deeper tissue.

Looking at the flip side of the coin, it is not an uncommon observation that substances applied to the skin for beautification...
often elicit a contrary response. Pomade acne was coined by Plewig et al. to describe a predominantly comedonal eruption on the forehead and temples of Negro men, who applied various greasy grooming substances for long periods of time as part of their daily toilet. The lesions on healing left behind no sequelae. Although the grooming agents used by these patients had been carefully formulated, meeting responsible standards of manufacturing, the chief ingredients in these cosmetics were a blend of high-melting hydrocarbons which were potentially comedogenic, as established in the rabbit ear canal assay model. This is in contrast with a previous report in which paraffin oil–induced comedonal acne in children had been caused by impurities in the oil.14

In a later study, Kligman and Mills15 reported an acneiform eruption (acne cosmetica) consisting chiefly of small, scattered comedones predominantly seen on the chin and, to a lesser extent, on the cheeks of women in the age group 20–50 years. The lesions lasted a few days and healed without any perceptible scars. The authors found almost 60% of branded foundation creams to be comedogenic in the rabbit ear canal model, and this was not because of the use of cheap ingredients or adulterants in the creams, but due to the intrinsic properties of the chemicals present in the creams.

In another study, Khanna and Datta Gupta16 reported the development of deep-seated indolent nodules on the cheeks of women, a few weeks after facial beauty treatment. It was unlikely that the acne was caused by comedogenic agents present in the creams, because in one-quarter of the patients the lesions occurred after the first massage itself. The vigorous massage may cause either blockage of the pilosebaceous ducts or their disruption, and this hypothesis was to some extent supported by the histologic findings of dermatitis with a lymphohistocytic, neutrophilic, and granulomatous response. There was probably a distension of the hair follicles with perifolliculitis and eventual rupture of the hair follicles; this was followed by a granulomatous response, as in none of the biopsies with a granulomatous reaction was an intact follicle observed. The present study corroborates the observations of this earlier study. The most alarming feature, however, was the high percentage (33.1%) of women who developed an acneiform eruption following facial beauty treatment. The other side-effects encountered included persistent erythema on the center of the face in about 7% of subjects. This was related to the trauma of comedone extraction. Contact dermatitis was seen in four (4.4%) subjects. In all these patients, the probable allergen was present in the less frequently used, exotic components of the facial beauty treatment. There have been several earlier reports on contact dermatitis to creams and moisturizers. In a study on the adverse effects of cosmetics and toiletries by the Swedish Medical Products Agency, it was found that moisturizers were the commonest cause of contact dermatitis.11 In another study, although almost one-half of the cases of facial dermatitis were caused by skin care products, such as moisturizers, cleansing agents, and creams, contact allergy was responsible only for a mere 10% of all the reactions to cosmetics and toiletries.17

Facial beauty treatments are soothing and relaxing procedures resulting in several subjective benefits, but there are definite adverse effects in almost one-third of patients in the form of dermatitis and acneiform eruptions.

References

16 deGroot AC. Contact allergy to cosmetics: causative ingredients. Contact Derm 1987; 17: 26–34.