

Golden Peel Plus for the Treatment of Breast Flaccidity: A Clinical, Histological, and Statistical Study

Enrique Hernández-Pérez, MD; José A. Seijo-Cortés, MD; Hassan Abbas Khawaja, MD

Breast flaccidity is a common complaint among women. This article reports the results of a clinical, histological, statistical study examining the use of Golden Peel Plus (Jessner solution plus 53% resorcinol, 5% glycerol monostearate, 5% cetyl alcohol, and 37% deionized water) to treat 30 women with this condition. Each patient received 4 treatments with Golden Peel Plus on the right breast only administered at 2-week intervals. All patients showed clinical, histological, and subjective improvement. An average shortening of 1.6 cm was noted in the treated breast posttreatment, representing a significant change ($P < .05$) from baseline, as measured by the t test.

Flaccidity of the breast is a frequent concern among mostly middle-aged women. The word *flaccidity* is derived from the Latin root *flaccidus*, meaning *weak* or *lax*,¹ *flabby* and *lacking in firmness*,² or *hanging in loose folds or wrinkles*.³ Subjective and objective parameters are used to measure this condition.

A broad spectrum of treatments has been proposed for breast flaccidity, from noninvasive (eg, microdermabrasion, vacuum, laser, intense pulsed light) to aggressive surgical procedures (eg, mastopexy, breast implants). The problem is not only the condition itself but also the potential side effects of treatment. Surgery frequently results in visible scars, pain, bleeding, hematoma, and capsule contracture. Although modalities such as lasers, intense pulsed light, and microdermabrasion^{4,5} are

minimally invasive, the high cost of these procedures often limits their use.

Golden Peel is a relatively safe, effective, and inexpensive chemical peel. The product consists of a formula containing 53% resorcinol, 5% glycerol monostearate, 5% cetyl alcohol, and 37% deionized water. When Jessner solution is applied to the frosting point prior to application of the resorcinol formula, the result is Golden Peel Plus.⁶ We have used the Golden Peel for the treatment of several cosmetic conditions such as active acne, acne and atrophic scars, photoaging, intrinsic aging, and striae distensae. This article presents the results of a clinical, histological, and statistical analysis of Golden Peel Plus for the treatment of 30 women with breast flaccidity.

MATERIALS AND METHODS

Thirty women, aged 23 to 60 years (mean age, 33.7 years) with breast flaccidity were enrolled in the study. All patients had at least one previous pregnancy and 80% exhibited Fitzpatrick skin type III or IV. Informed consent was obtained prior to commencement of the study. Patients were excluded from the study if they were

Dr. Hernández-Pérez is Director, and Drs. Seijo-Cortés and Khawaja are Attending Physicians, all at the Center for Dermatology and Cosmetic Surgery San Salvador, El Salvador.

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pregnant or breast-feeding and/or had kidney impairment. Both breasts were measured (in centimeters) from the midclavicle to the nipple. A general and subjective assessment of improvement (ie, color and tissue firmness) was made by each patient, a physician, and a nurse. Treatment-related adverse events included burning, bullae formation, pruritus, pain, and postinflammatory hyperpigmentation.

A total of 4 peels, administered once every 2 weeks, were performed on the right breast only. The skin was treated with a mild astringent solution and then scrubbed with polyethylene granules followed by application of Jessner solution. We performed 3 to 6 passes (4 passes on average) as needed until an obvious frosting was observed. Next, Golden Peel was applied to the entire exterior of the breast (including the nipple and the areola) and left on until a whitish discoloration (indicating protein coagulation) was noted. The peel was then gently removed using a mild astringent solution; at this point, the skin had a white appearance in the center with some redness and congestive aspect at the periphery. Two to 3 days after treatment, a red to light brown skin discoloration was noted. Four to 5 days later, the skin began to peel in the form of thick, dry, deep-brown scales. Photographs were taken at baseline and 2 weeks after the last treatment.

Two 4-mm punch biopsies were performed, one at baseline the other 2 weeks after the final treatment. Hematoxylin and eosin and Verhoeff stains were used for elastic tissue. Measurements were taken before and after each treatment using an optic micrometer. Histologic assessment was performed by a pathologist and a dermatopathologist. The time required for Jessner solution and Golden Peel to reach the frosting and whitening stages was recorded for each patient.

RESULTS

For each treatment session, mean time required for activation was 2 minutes for Jessner solution and 4 minutes for Golden Peel. A subjective general evaluation was made by each patient, as well as a physician and nurse. Improvement was described as “very good” in 80% of

Golden Peel Plus for the Treatment of Breast Flaccidity (N=30)*

Outcome	Patients (%)
Very good	24 (80)
Good	5 (17)
Fair	1 (3)

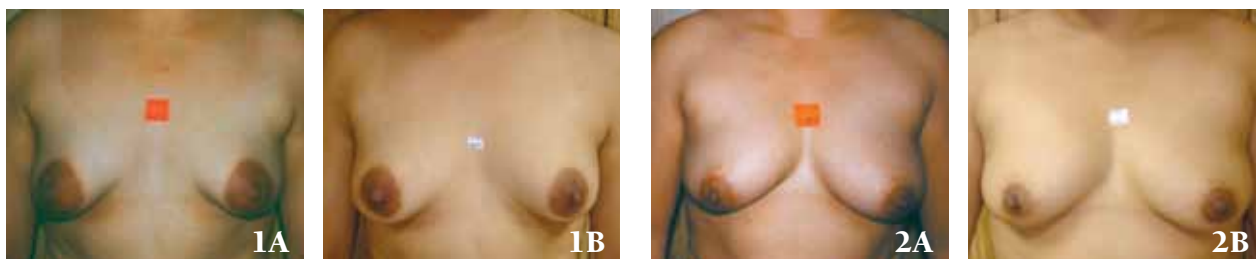
*Patients received 4 treatments with Golden Peel Plus (Jessner solution plus 53% resorcinol, 5% glycerol monostearate, 5% cetyl alcohol, and 37% deionized water) administered at 2-week intervals. Results represent the mean subjective assessment of each patient, a physician, and a nurse.

patients (24/30); “good” in 17% of patients (5/30); and “fair” in 3% of patients (1/30)(Table).

An average shortening of the right breast of 1.6 cm was observed compared with the contralateral breast (clavicle-nipple measurements), indicating a statistically significant difference ($P<.05$) from baseline, as measured by the t test (Figures 1 and 2).

Pretreatment biopsy results showed a thinned (atrophic) epidermis with almost complete flattening of rete ridges. Average epidermal and dermal thicknesses pretreatment were 1.02 mm and 3.2 mm, respectively. Biopsy specimens stained with hematoxylin and eosin exhibited somewhat disorganized collagen fibers in the upper dermis; these fibers were less noticeable in the deeper portions of the dermis. In addition, a band of dilated venules was observed all along the superficial vascular plexus, as well as a slight inflammation around the band (Figure 3A). With Verhoeff stain, elastic fibers appeared slightly diminished and fragmented.

Posttreatment biopsy results showed an average epidermal thickening of 1.32 mm. Rete ridges had begun to recover, and the band of dilated venules and inflammation disappeared (Figure 3B). Connective tissue subjectively



Figures 1 and 2. Patients before (1A and 2A) and after (1B and 2B) 4 treatment sessions with Golden Peel Plus (Jessner solution plus 53% resorcinol, 5% glycerol monostearate, 5% cetyl alcohol, and 37% deionized water) administered at 2-week intervals.

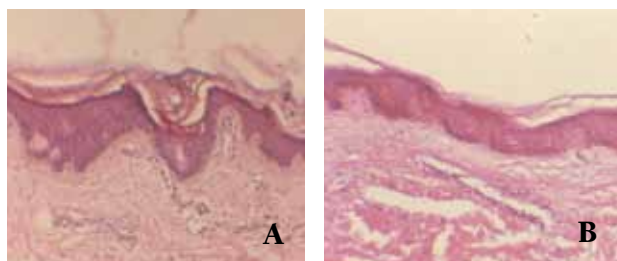


Figure 3. Dermal and epidermal thickness pretreatment (A) and posttreatment (B) (H&E, original magnification $\times 10$).

improved. Posttreatment dermal thickening averaged 3.9 mm.

Eight patients (27%) experienced a minor burning sensation that lasted less than 30 minutes and was alleviated by application of an emollient cream. Postinflammatory hyperpigmentation was observed in 6 patients (20%) and appeared to be completely self-limited. Eczematous contact dermatitis was not observed in any of the study participants.

COMMENT

Resorcinol is structurally and chemically related to phenol, and its mechanism of action is based on the induction of keratolysis and protein precipitation.⁷ It improves skin texture and homogenizes pigmentation.^{8,9}

The first report in English on the use of the Golden Peel was published in 1990,⁶ but we have been using resorcinol peels for more than 25 years. Golden Peel is composed of 53% resorcinol, 5% glycerol monostearate, 5% cetyl alcohol, and 37% deionized water. It has been recognized as a safe, simple, inexpensive, and effective chemical peel.⁹

The Golden Peel can be used to diminish signs of photoaging.⁸ It is effective in treating photoaging of the face,⁹ upper limbs, and neck, as well as striae distensae.⁷ The fact that the Golden Peel increases epidermal and dermal thickness and decreases dermal elastosis^{7,8} led us to examine its use for treating patients with breast flaccidity.

Subjective clinical assessment, histological evaluation, measure of shortening in the treated breast (1.6 cm on average), and the statistical analysis observed in this study support the effectiveness of this relatively simple procedure for the treatment of breast flaccidity.

Further studies are needed to determine whether longer incubation times and additional treatment sessions would increase efficacy. It should be noted that a total of 4 treatment sessions and incubation times of

2 minutes for Jessner solution and 4 minutes for Golden Peel were considered to be sufficient for the purposes of this study.

Although dramatic improvement was not seen in the patients we studied, Golden Peel Plus is a viable, minimally invasive alternative to surgical procedures for the treatment of breast flaccidity. It is a relatively inexpensive in-office procedure that requires no anesthesia and produces minimal side effects and downtime.¹⁰⁻¹³ Golden Peel Plus provides the benefits of a deep peel (penetrating to the papillary and upper reticular dermis) but is considered to be a medium-depth peeling agent.^{14,15}

CONCLUSION

Golden Peel Plus is a simple, effective, inexpensive, and safe method of medium-depth chemexfoliation, with a spectrum of action that includes photodamage of the face, neck, and upper limbs, as well as treatment of striae distensae. In addition, it may be used as an in-office procedure for the improvement of breast flaccidity.

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