## CASE STUDY

# Use of Occlusive, Collagen Gel Masks as an Adjunctive to Aesthetic Medical Skin Treatments: a Split-face Case Study

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#### Abstract

**Background:** Preparatory protocols and post treatment topical treatment regimes are commonly employed in combination with various aesthetic skin treatments, including ablative and non-ablative light based treatments, photodynamic therapy, chemical peels and microneedling. The need for simplifying, standardizing and improving such treatment protocols exists. Collagen Veil® aims to achieve this goal with a three step program of soft, pliable, plant collagen gel masks infused and immersed in different medically formulated ingredients specifically designed for their respective purpose.

**Methods:** Facial Photodynamic therapy was performed on one subject, followed by split face application of soft gel mask with post treatment formulation twice daily along with photographic monitoring bilaterally and patient reported questionnaires for 5 days.

**Results:** Immediate soothing was experienced by the subject to the treated side that lasted for hours after each application. The treated side appeared smoother, experienced less flaking and apparent faster healing time compared to the untreated side.

**Conclusion:** The collagen gel mask was effective in providing soothing with lasting comfort, improved skin appearance and faster healing compared with the untreated side and is a good option for use after skin treatments that lead to inflammation, discomfort, peeling and flaking. Additional studies are warranted.

## Introduction

he use of topical agents on injured, irritated or inflamed skin ■ dates back for millennia in view of providing relief, preventing infection, to aid in the healing process and reduce scar formation. Prior to performing any skin treatment that causes pain due to micro injuries, such as fractional laser or micro-needle treatments, the application of topical anaesthetic preparations is widely adopted in cosmetic dermatological practices<sup>1</sup>. Occlusion of topical products provides a moist environment that prevents water evaporation and allows for continued absorption of ingredients and in the case of topical anaesthetics, better analgesia<sup>2</sup>. Post procedure, an inflammatory response due to micro injury results in the release of many inflammatory mediators producing vasodilatation, erythema, edema and pain. Appropriately chosen topical substances can subdue the symptoms associated with inflammation and provide temporary relief as well as support the wound healing process<sup>3,4</sup>.

Utilizing a soft, pliable, plant collagen based gel mask and immersed in a water-based formula, an evenly occlusive environment suitable to skin absorption of ingredients is created upon application. The formula for post treatment use contains natural anti-inflammatory agents as well as nutrients and agents supportive to wound healing and collagen remodelling such as Aloe Vera, witch hazel, allantoin, copper tri-peptide, tea tree oil, vitamin E (tocopherol), honey and liquorice root.

The purpose of this study was to evaluate the patient reported reduction in discomfort obtained with the post treatment application, as well as study the objective skin changes over five days following an inflammation inducing skin treatment in a split face manner.

Figure 1: Notably reduced inflammation and flaking is apparent on the right side of the face being treated with post treatment formula collagen gel mask compared to the untreated side during the first five days following Photo Dynamic Therapy



Day 5 – Mask

Day 5 - No Mask

#### Method

Photodynamic therapy was performed on the face of a 49 year old male Caucasian subject with moderate sun damage. The skin was prepared with a simple skin cleanser, water and woven gauze followed by a 3 pass microdermabrasion and brisk rolling with a 0.3mm micro-needling skin roller. Aminolevulanic acid 20% was applied via kerastick to the entire face, from hairline to jaw line while taking care to avoid the eyes, nostrils and lips.

After a one-hour incubation period, the face was exposed to 410nm blue light (Blu-U light source) for 16 minutes. Immediately following light exposure, the skin was notably erythematous and the patient described a burning and tingling discomfort. The facial skin was gently cleansed with cool water and a post treatment collagen gel mask applied to the right side of the face only.

The patient was instructed to keep applying the post treatment mask to the right half of the face only at least twice daily for 30 minutes at a time, while not treating the left side whatsoever.

High-resolution images were taken before the procedure and again at the same time daily for five days and the skin appearance evaluated. The patient was asked to rate the comfort of the treated side vs. the untreated side each day following the mask application. A 5-point Likert scale was used to describe the level of discomfort with 1 being very minor discomfort, 2 being mild discomfort, 3 being moderate discomfort, 4 being moderate to severe discomfort and 5 being extremely severe discomfort.

#### Results

Dubjective evaluation on day one directly after treatment revealed discomfort at a level of 4 out of 5 of the entire face, described as a sunburnt sensation. Immediately upon application of the collagen gel mask to the right side of the face relief was felt and after 5 minutes the left side remained at 4/5 while the treated side had subsided to 2/5 and remained after removal, gradually reaching equal discomfort levels as the untreated side after 2 hours.

Reapplication 12 hours after achieved a similar soothing effect on the treatment side improving discomfort to a level of 2/5. After 24 hours, general discomfort had subsided to 3/5 overall and after application of the collagen mask to the right side of the face, discomfort improved to a 1/5 level. On day three general discomfort was rated as 2/5 and with mask application improved

to 1/5. Day four and five was equally rated as general discomfort at 1/5 reduced to 0/5 with mask use. The patient reported softer, smoother skin and more elasticity noticeable with facial animation throughout the five-day period compared to the untreated side that remained tight, dry and sensitive.

Objective evaluation of the split face revealed smoother betterhydrated skin on the treated side and slightly more erythema on the untreated side. Day two revealed similar results. Some flaking could be perceived on day three, more obvious on the untreated side. Day four revealed significant remaining peeling on the untreated side while less visible peeling remained on the treated side. Day five showed smoother, calmer, clearer skin on the treated side, while the untreated side revealed dry, flaky, more erythematous skin with more fine lines visible.

Day 3

Day 5

Day 4

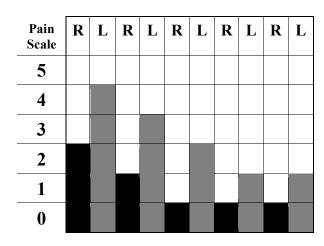
#### Figure 2:

# Collagen Gel Mask

Daily reduction in sensitivity reported by the subject following collagen gel mask use on the right side of the face compared to the contra lateral side

Patient Comfort Graph

L = Left Side of Face - Not Treated R = Right Side of Face - Treated



Day 1

Day 2

Figure 3: Collagen Gel Mask



Figure 4: Split Face Application of Collagen Gel Mask



#### Discussion

n this case study, the subject experienced noticeable soothing and reduction in discomfort in the acute phase post PDT treatment. The skin felt softer and smoother on the treatment side compared to more tightness and dryness on the untreated side. The skin appeared smoother, more reflective and less erythematous on the collagen gel mask treatment side compared to the other.

The collagen gel mask is pliable, adheres to the skin well and is tightly occlusive. The water-based formula allows for evaporation on the outer side of the mask, resulting in cooling

and added soothing effect in addition to the soothing properties of the ingredients. The mask is easy to apply, sits lightly on the face and can be manipulated to suit various facial shapes and sizes. The mask can be applied as often as desired, but for this purpose was used only on the right side and twice daily to assess potential subjective and objective improvements in view of patient comfort and skin appearance.

# Conclusion

Post treatment collagen gel mask with this particular formulation provides a simple to use, quick and effective discomfort relief option to patients in office as well as for continued use at home over days following office based dermatological procedures.

Additional studies are warranted to evaluate the safety and efficacy of the collagen gel mask as an adjunct to a variety of procedures in order to optimize patient outcomes, standardize treatment regimens and achieve statistically significant result.

# References

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