CASE STUDY

Pain Reduction with the use of Soft Collagen Gel Masks for Occlusion of Topical Anaesthetic prior to Medical Skin Treatments: a Split-face Study

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Abstract:

Background and Objectives: Energy based treatments, injectables and micro-needling are all associated with varying levels of patient discomfort. This study aims to demonstrate that effective pain reduction can be achieved with soft gel mask moist occlusion of a commonly utilized topical anaesthetic preparation (Eutectic Mixture of Local Anaesthetics)

Study design/Materials and Methods: Pain was assessed using a 0-5 pain scale, treating multiple facial sites with a 1mm micro-needling pen, divided into zones of no anaesthetic application, anaesthetic without occlusion and occlusion with a soft gel mask for 30 min

Results: Eight patients were chosen at random, one male and seven females. Mid forehead area was chosen as control, left face as topical anaesthetic without occlusion for 30 minutes and right face as face as topical anaesthetic with soft gel mask occlusion for 30 minutes, treating lateral forehead, mid cheek and jowl areas. Consistently the highest pain levels were recorded in the control area, followed by left face while the occluded areas were the least sensitive as reported all the subjects.

Conclusions: Topical anaesthetic preparation applied for 30 minutes to clean skin is effective for achieving partial anaesthetic effect of the skin. With the addition of soft, moist gel occlusion, the anaesthetic effect was significantly enhanced in all test subjects. Standardized use of soft moist gel masks to occlude topical skin anaesthetic is therefore a useful and reasonable adjunctive protocol addition in preparation for otherwise painful skin procedures.

Introduction:

Aesthetic Medical and Clinical skin procedures have encountered a boom over the past fifteen years, a fact substantiated by the annual US Plastic Surgery Statistics Report. Pain reduction, or elimination where possible, is essential to any successful medical practice. Procedures that are increasing in popularity, such as micro-needling, mesotherapy and injectables such as neurotoxins and fillers as well as laser treatments such as fractional resurfacing and laser peels, are all associated with often unacceptable levels of pain during treatment.

Many clinicians have instinctively applied topical anaesthetic preparations prior to treatments, also often occluding the skin post application with plastic film.[1,2] Thick layers of topical anaesthetic can be a messy proposition and plastic film application is inelegant, although seemingly practical, but by no means ideal.

Figure 1: Areas of Topical Anaesthetic application

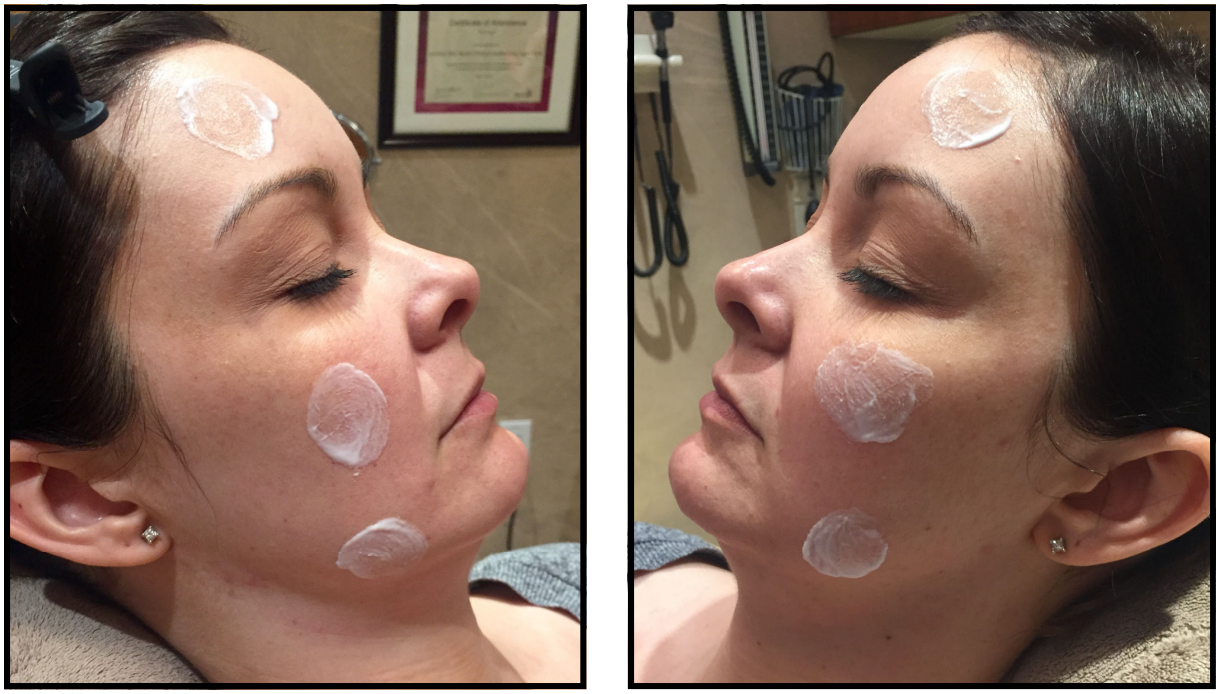

Figure 2: Split face Application of occluding Soft Gel Collagen Mask

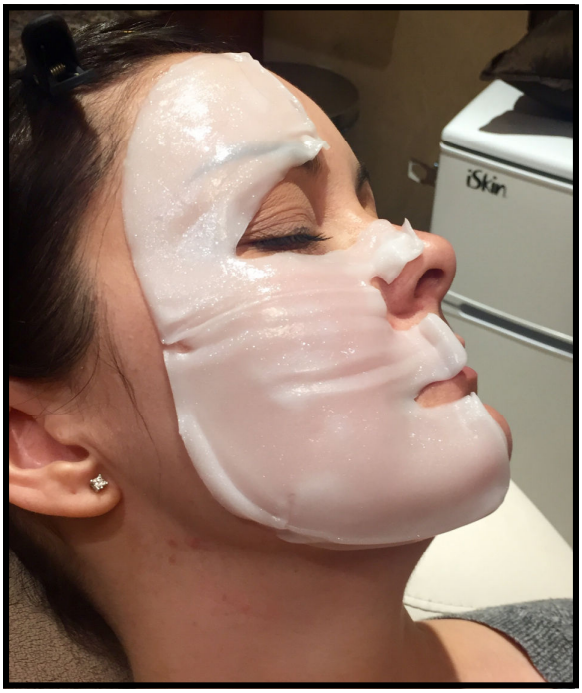

Table 1:

Accumulated Data of 8 test subjects — Pain Scale 0 - 5

		Pain Reduction Factor
Control Area	**4**	**1**
Site 1 a	**2.25**	
b	**0.875**	**2.57**
Site 2 a	**1.125**	
b	**0.25**	**4.5**
Site 3 a	**1.5**	
b	**0.625**	**2.5**
Average Pain Reduction		**3.19**

Site 1 : Lateral Forehead
Site 2 : Mid Cheek
Site 3 : Jowel area

Control : Mid Forehead
a : Left (Unoccluded)
b : Right (occluded)

Materials and Methods:

Utilizing a soft, pliable, shape conforming moist collagen gel mask for occlusion purposes was a logical alternative to a thin plastic film. The masks that were used in this study were neatly packaged, easy to open and apply in one easy step and are a universal fit, allowing it to conform to almost any facial shape and size with some manipulation and shaping. After cleansing the skin in standard fashion, a small amount of topical anaesthetic cream was used and applied in a thin layer prior, to perform test treatment in specific areas (See Fig.1) Any air pockets were massaged out and all treatment areas were very tightly occluded on the right side of the face while the patients were comfortably seated in an aesthetic reclining chair.

Patients had to be reclined to prevent the mask from sliding of the face. The mask had to be readjusted for two patients halfway through as it started sliding down, but in general the process was simple.

For this study, the masks were cut in half and only applied to the right side of the face. After 30 minutes, the mask was removed, the face cleansed again and five predetermined areas briefly treated with a 1mm micro-needling pen. Subjects then reported the pain sensation that was experienced in each site on a scale of 0 - 5 (0 being no pain and 5 being severe).

Eight Patients were treated in total.

Results:

Patients reported a pleasant cooling sensation to their skin on the mask side during the entire 30 minutes of application. The central forehead control area was the most painful treatment area for all the subjects. All patients reported improved anaesthetic effect on the soft gel mask occluded side compared to the un-occluded side in at least one of the treated sites. On the occluded side the average overall pain reduction was a statistically significant factor of 3.19 (See Table 1) compared to the non-occluded side.

Application of the soft gel mask was a simple process and it proved easy to apply and conform to the facial contours in all cases.

Conclusion:

Soft moist collagen masks offer a simple, practical and very effective means of improving topical anaesthetic effects with moist topical anaesthetic skin preparation occlusion in this small study. A larger multi centre, double blinded study would be helpful to provide more accurate and substantiating data.

References

1. Lener EV, Bucalo BD, Kist DA, et al. Topical anesthetic agents in dermatological surgery: a review. Deratol Surg 1997;23:673-83
2. J. Sawyer, S. Febbraro, S. Masud, M. A. Ashburnand J. C. Campbell
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