

## Micro Needle Peel: Microneedling Associated to with Chemical Peel in the Treatment of Pigmentation Disorders

Phamela Priscila de Oliveira Bezerra\*

University of Cuiabá - UNIC, CRBM: 5938 Cuiabá / Mato Grosso - Brazil.

### \*Correspondence:

Phamela Priscila de Oliveira Bezerra, University of Cuiabá - UNIC, CRBM: 5938 Cuiabá / Mato Grosso - Brazil.

Received: 27 December 2019; Accepted: 13 January 2020

**Citation:** Phamela Priscila de Oliveira Bezerra. Micro Needle Peel: Microneedling Associated to with Chemical Peel in the Treatment of Pigmentation Disorders. J Med - Clin Res & Rev. 2020; 4(1): 1-4.

### ABSTRACT

**Objective:** To treat aesthetic facial dysfunctions caused by stains and melasma in patients undergoing treatment with Micro-Needle Peel, a name given to this technique involving of treatment with micro-needles and associated with chemical peeling performed in the Aesthetic Biomedicine Clinic, and to present modifications and results of this treatment. Generally, skin hyperchromias are a difficult condition to treat, resulting in a tendency to indicate combined procedures for their treatment. The objective of this study is to prove that melasma and hyperchromias can be treated with micro-needles associated with peeling, in the same session without the need for daily intervals between the micro-needle and peeling sessions.

**Method:** In this longitudinal descriptive and comparative research, 5 women from Brazil, aged between 30 and 50 years, were selected for the study. All participants sought clinical biomedical aesthetic care for the face at the Bellavish Aesthetic Clinic, Dublin, Ireland from 09/2017 to 12/2018. All participants were informed about the objectives and protocols of the study and freely and spontaneously consented to their participation.

The women performed anamnesis and clinical evaluation through clinical observation. All were photographed before and after the treatment, standing, leaning against the wall in a standing position, with hair tied with the camera being kept at a distance of 50 cm from the subject. The photos were taken from the front, and from the right and left profile, with the subject at rest.

For the aesthetic treatment of the face, a protocol was developed and applied, beginning with the preparation of the skin. The skin was deeply cleaned and then prescribed dermocosmetic products were used, based on 0.5% retinoic acid, with the use of 04% hydroquinone, kojic acid and tranexamic acid associated with ascorbic acid, dependant on the type of skin and the skin phototype. The chemical peeling used in this technique was based on salicylic acid, lactic acid and glycolic acid, which are often used as treatment for pigmentates disorders.

**Results:** All participants (100%) noticed facial changes including a decrease of spots, improvement of scars caused by acne, reduced eye wrinkles and a decrease of the nasolabial sulcus, as well as more vigorous and shiny skin and smoothing of expression marks (90.91%). Third parties noted changes such as more vigorous and shiny skin (45.45%). The average degree of satisfaction in facial appearance increased from 46% to 80%.

**Conclusion:** Treatment with Micro Needle Peel provided facial modifications which were perceived as improvements by the clients, third parties and specialists. The participants were more satisfied with the aesthetic aspect of the face after the aesthetic treatment intervention.

### Keywords

Biomedicine Aesthetics, Face restoring skin integrity (KLAYN, 2013).

- Biomedicine Course at University of Cuiabá - UNIC-MT
- Biomedicine; Phamela Priscila de Oliveira Bezerra, entrepreneur, created the first Aesthetic Biomedicine Clinic

in Europe, Bellavish Aesthetic Clinic 2015, Post-graduated in Aesthetic Biomedicine by Nepuga - (Núcleo de Estudos em Estética Ana Carolina Puga) - São Paulo- Brazil.

## Introduction

Micro-needling is a procedure with various clinical indications performed with an electric pen, called a Dermapen, where the needles of the microneedle pen are made of polyethylene provided with sterile steel micro-needles inoxidable ranging from 0.25 mm to 2.5 mm. Skin rejuvenation, the treatment of scars, stains and acne, and the penetration of actives such Vitamin C, Epidermal growth factor (EGF) are some of the goals that can be achieved with this technique. It can be used for aesthetic and dermatological purposes and is a percutaneous procedure, creating microlesions in the skin which generate a local inflammatory process, increasing cellular production, especially fibroblast production, and thus increasing the cellular metabolism of the dermis and epidermis, inducing the production of collagen, elastin and other substances present in the tissue.

Micro-needling enhances the permeation of cosmetic active ingredients, since the microlesions facilitate the absorption of the active. Several studies have been conducted to demonstrate that micro-needling enables drug delivery, providing increased skin permeability by creating microchannels that stimulate transepidermal/transdermal transport of drugs (i.e. permeation via application to the skin). Another treatment option involves alpha-hydroxy acids, which are used as chemical peels and are efficient in the treatment of wrinkles, dehydration, thickening, and irregular pigmentation of the skin. Dermocosmetic products, on the other hand, have active ingredients destined to lighten the skin, attenuating hyperchromias. The action of such active ingredients occurs through different mechanisms of action, but all are linked to interference in the production or transfer of melanin.

The objective of this case study was to analyse the efficacy of the combined action of microorganisms associated with bleaching actives in the treatment of hyperchromic spots. In total, 5 women aged 30 to 50 years participated in the study. They underwent 3 to 6 sessions, each session occurring at 30-day intervals. All participants underwent evaluation and anamnesis before starting the treatment. Pre and post treatment photos were taken and analysed by the participants and others.

## Method

In this longitudinal descriptive and comparative research, 5 women from Brazil, aged between 30 and 50 years, were selected for the study. All participants sought clinical biomedical aesthetic care for the face from the Bellavish Aesthetic Clinic, Dublin, Ireland from 09/2017 to 12/2018. All participants were informed about the objectives and protocols of the study and freely and spontaneously consented to their participation.

The women performed anamnesis and clinical evaluation through clinical observation. All were photographed before and after the treatment, leaning against the wall in a standing position, with hair

tied with the camera being kept at a distance of 50 cm from the subject. The photos were taken from the front, and from the right and left profile, with the subject at rest.

For the aesthetic treatment of the face, a protocol was developed and applied, beginning with the preparation of the skin. The skin was deeply cleaned and then prescribed dermocosmetic products were used, based on 0.5% retinoic acid, with the use of 04% hydroquinone, kojic acid and tranexamic acid, associated with ascorbic acid, dependant on the type of skin and the skin phototype. The chemical peeling used in this technique was based on salicylic acid, lactic acid and glycolic acid, which are often used as treatment for pigmentation disorders. Minimum variations were introduced with regard to the size of the needle used in the procedure, varying from 0.75 to 1.5 mm depending on the region of the face.

A minimum of 3 to 6 months treatment was planned, although this period could be extended according to the reaction of each human body receiving the treatment.

The technique carried out in this study was intended to enhance the use of home care dermocosmetic products and the treatment could, consequently, act on other areas, such as facial rejuvenation (fine lines to average expressions) and acne scars. Soon after the application, some care was required, with the use of all home care dermocosmetics products being suspended during the period when the skin was scaling, which could vary from 5 to 10 days.

Figures I, II, III, IV, V & VI show the photographs.





### Characteristics of the micro-needle technique associated with chemical peel

The treatment was performed as a mechanical procedure, which uses a microneedle pen containing 12 ultra-fine sterile needles. The needles were simply injected into the skin, leading to the formation of small perforations and bleeding on the skin surface, facilitating the delivery of the active ingredients used during the session. The pain experienced was of a very low level, however, in cases where a person had a very low threshold of pain, anaesthetic cream could be used.

All treatments used, from chemical peeling to home care treatments, were part of the OBAGI MEDICAL line of drugs and dermocosmetic products.

### Contraindicated Micro Needle Peel

Whilst the treatment is simple and easy, it is important to respect the skin anatomy, ensuring sterility and knowing how to handle the instrument correctly. As it is an invasive treatment, it can incur skin lesions and infections.

Among the main contraindications are

- open wounds: there may be aggravation of the skin
- sunburned/brown skin: there may be hypersensitivity, and there is a risk of hyperchromia due to increased melanogenesis;
- active herpes and acne: there may be an increase in the lesion due to the spread of the causative agent;
- any infection or acute inflammation of the skin: increased sensitivity of the injured skin;
- history of poor wound/diabetes healing: effects of poor lesion healing;
- collagen diseases (Cushing's Syndrome): poor quality or deficient collagen may be generated;
- areas with neoplasia;
- allergy (to metal, to cosmetic);
- use of anticoagulants: because there are risks of uninterrupted bleeding;
- pregnancy: without the use of cosmetics/medicines it is safe, but when there is a need to use chemical products, the choice of substance to be used should be made with great discretion;
- use of roacutan (isotretinoin): recovery from perforation in the skin can generate hypertrophic scars and cause "deformations" in the skin.

### Physiological effects

The application of the micro-needles results in physiological effects which generate the response obtained after treatment. These effects are: stimulus to the production of collagen; improvement of the quality of the epidermis and dermis; and angiogenesis.

### Adverse Effects

The causes of complications or undesirable effects from the use of micro-needles may vary depending on the choice of equipment type and whether the procedure is inadequately executed. To avoid adverse effects, it is ideal to be performed by a qualified and certified professional with the technique described Micro Needle Peel. Adverse effects may result from: inappropriate speed or rhythm for performing the technique, exaggerated pressure, reuse of needles, use of cosmetics or other substances with allergenic potential, too short an interval between sessions and incorrect association with other therapeutic resources.

Some adverse effects that can be observed in the treatment of micro-needles are:

- Bleeding during the session: depending on the size of the needle and the pressure exerted, bleeding may occur, which ceases soon after the end of the procedure;

- severe hyperemia/redness;
- pain at the treatment site: mainly with the use of needles longer than 1 mm;
- intense peeling: occurring from the second day after micro-needle use;
- edema;
- mechanical "scratch" or "burn" marks: these can happen with the micro-needle being passed in an inadequate way or using an excessive pressure at the point of the microneedle pen intensely on the skin;
- inflammatory hyperchromia: this occurs in the case of sun exposure, mainly in high phototype skins.

## Results

The resulting sample consisted of 5 women with a mean age of 30 years and 45 years of standard deviation.

In the anamnesis, it was found that, out of 11 women, eight (72.73%) reported low self-esteem because they were dissatisfied with themselves; two (18.18%) were smokers; three (27.27%) presented with bruxism; four (36.36%) had repetitive facial expressions; two (18.18%) had facial tension; and the double chin was checked in eight (72.73%) of them. two (18.18%) reported good quality sleep; seven (63.64%) used face cream; and two (18.18%) used sunscreen.

It was observed that five (45.45%) had the biotype of mixed skin, seven presented changes in their condition (63.64%) and the most frequent phototype was type IV. Wrinkles were found in ten (90.91%) women, located around the eyes in ten (90.91%); in the glabella in six (54.55%); and around the mouth in four (36.36%).

The jowl was seen in eight (72.73%) women.

After aesthetic speech therapy for the face, eight (72.7%) women reported a sensation of well-being and three (27.3%) perceived a more relaxed facial sensation.

## Conclusion

The treatment provided facial changes which were perceived as improvements by participants, third parties and specialists.

All participants undergoing the treatment perceived facial modifications, most frequently observed was a reduction of wrinkles around the eyes and lips; followed by the reduction of the nasolabial groove, more defined lips, more vigorous and shiny skin and the smoothing of expression marks. The decrease in the jowl was the least mentioned.

About half of participants reported that third parties noticed facial changes, such as diminished dark circles and more vigorous and shiny skin. After treatment, most women were more satisfied with their facial appearance.

## References

1. Sampaio SAP, Rivitti EA. Anatomy and physiology. In: Sampaio SAP.
2. <http://www.lersaude.com.br/microagulhamento-terapia-de-inducao-de-colageno-provoca-microferimentos-na-pele-para-populacion-brands>
3. [http://www.uniararas.br/revistacientifica/\\_documentos/art.10-031-2015.pdf](http://www.uniararas.br/revistacientifica/_documentos/art.10-031-2015.pdf)
4. Borges FS, Scorza FA. *Terapêutica em estética conceitos e técnicas*. São Paulo Phorte. 2016.