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Action of microfocused ultrasound in the treatment of facial rejuvenation

Action of microfocused ultrasound in facial rejuvenation treatment

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SUMMARY

Over the years, the skin undergoes decline in all its functions, making changes evident through appearance. The demand for aesthetic procedures for facial rejuvenation has been growing, making microfocused ultrasound an alternative for the treatment of skin with signs of aging. The general objective of the study presented and discussed the action of microfocused ultrasound technology in the treatment of facial rejuvenation. This work was carried out a bibliographic review with an exploratory method. For data collection, a sample of the results of this research was collected from thirty-two databases contained in the Google Scholar, Scielo, PubMed databases, in addition to books on dermatology, human anatomy and physiology and the manual for the Fismatek brand microfocused ultrasound equipment. Articles between the years 2012 to 2024 were searched, with an inclusion method referring to the theme of integumentary tissue, facial aging and the action of microfocused ultrasound equipment for facial rejuvenation. It was concluded that microfocused ultrasound technology works by focusing thermal energy through mechanical waves on a specific region in the skin layers, enabling a non-invasive and safe treatment for facial rejuvenation. It presents effective results for the treatment of wrinkles and facial sagging, in addition to generating positive satisfaction in patients after the session.

Keywords: Skin aging, Facial rejuvenation and Microfocused ultrasound

ABSTRACT

As the years go by, the skin suffers a decline in all its functions, making the changes evident in appearance. The demand for aesthetic procedures for facial rejuvenation has been growing, making microfocused ultrasound an alternative for treating skin with signs of aging. The general objective of the study was to present and discuss the action of microfocused ultrasound technology in the treatment of facial rejuvenation. A bibliographical review was carried out using an exploratory method. In order to gather data, a sample of thirty-two articles was collected from the Google Scholar, Scielo and PubMed databases, as well as books on dermatology, human anatomy and physiology and the Fismatek microfocused ultrasound equipment manual. Articles were researched from 2012 to 2024, with the inclusion method referring to the subject of skin tissue, facial aging and the action of microfocused ultrasound equipment for facial rejuvenation. It was concluded that microfocused ultrasound technology works by focusing thermal energy through mechanical waves on a certain region in the layers of the skin, enabling a non-invasive and safe treatment for facial rejuvenation. It provides effective results for the treatment of wrinkles and facial sagging, as well as generating positive patient satisfaction after the session.

Keywords: Skin aging, Facial rejuvenation and Microfocused ultrasound

1 INTRODUCTION

Skin aging is defined by the functional and organic decline of the organism that happens inevitably, being something natural, progressive and multifactorial. It causes sagging due to decreased muscle tone, loss of support caused by bone remodeling, the decrease in the volume of fat compartments and the decrease in collagen fibers (PEREIRA, et al, 2021).

Of all the changes that occur during aging, those that occur in the skin are the most visible. In addition to sagging, these include wrinkles, dryness, expression lines, the appearance of furrows and dyschromia. (GOMES; DAMAZIO, 2017).

Microfocused ultrasound is an electrotherapeutic device that uses a head transducer emits mechanical and kinetic oscillations. It has the function of permeating the organism reaching different layers of the skin, causing thermal and non-thermal effects (AGNE, 2013). It is an

aesthetic equipment that aims to serve an audience seeking a non-invasive procedure for rejuvenation treatment. It can be applied to the subcutaneous tissue, at temperatures above 60ºC which produces small thermal coagulation points up to 55 mm deep in the deep middle reticular layer up to the superficial muscular aponeurotic system (FRANCE; FRANCE, 2020).

Franca and Gotardo (2023) say that microfocused ultrasound generates several benefits, which among them are the treatment of facial sagging, eyebrow arching, neck treatment, double chin, neck, upper lip, architecture and facelift.

Given the demand for aesthetic procedures to treat signs of aging, it is important to discuss how microfocused ultrasound technology acts on the skin layer, causing that the objective of this study is to present and discuss the action of the equipment in the treatment of facial rejuvenation. Specifically, the effect of microfocused ultrasound on the dermis will be highlighted to the superficial aponeurotic muscular system, identifying the physiological effect that occurs in skin to rejuvenate.

2 THEORETICAL FRAMEWORK

2.1 THE SKIN AND ITS STRUCTURE

The skin is the largest organ in the human body in terms of weight and surface area. In adults it reaches covering approximately 2 square meters, weighing between 4.5 and 5 kilos, participating approximately 7% of body weight (TORTORA, DERRICKSON, 2017).

As part of the epithelial system, one of its main functions is to isolate internal structures from the external environment through its double-layer membrane, acting as a mediator between the organism and the environment (HARRIS, 2016).

It is divided into three layers, namely the epidermis, which is the outermost epithelial tissue, named from the Greek epi which means above, and derma which means skin; the dermis, which is the tissue connective to which the epidermis is connected by the basement membrane and the hypodermis, being the most deep with the presence of fat cells - adipocytes (ALVES, 2019).

The epidermis is the outer layer, composed of stratified squamous epithelial tissue. keratinized. It has a variable thickness between 1.3mm and 0.06mm. It has no blood supply, causing nutrients to be transported to it by capillarity. Its main function is to be a protective barrier against the external environment, preventing the entry of foreign particles and retaining the internal contents of the body, such as water, nutrients and electrolytes (HARRIS, 2016).

It is composed mostly of keratinocytes and is divided into layers: basal or germinative, spinous, granular and horny. The basal layer is responsible for the intense activity mitotic; the spinous is composed of nucleated and flattened cells, which are joined by desmosomes, giving the spiny appearance; the granular layer has flattened cells with nuclei that secrete lamellar bodies that spread into the intercellular space, preventing the passage of compounds, and the cornea, which is the superficial layer, containing dead cells and without a nucleus, is thick and keratinized (VALÉRIO, 2021).

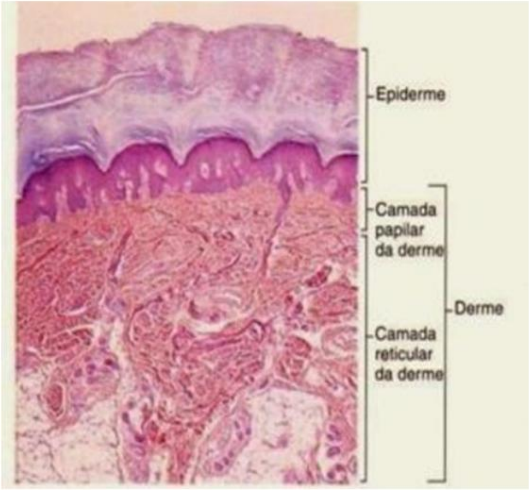
The second layer is the dermis, the conjunctiva forming the structural part of the integument. of the body. It is located between the epidermis and the hypodermis, and its thickness can vary from 0.5mm to 3mm. In it there are nerves, blood vessels and cellular components, such as fibroblasts, myofibroblasts and macrophages. The dermis is responsible for supporting the vascular network, promoting support, defense immunological associated with Langerhans cells of the epidermis and thermoregulation (HARRIS, 2016).

It is formed by the extracellular matrix (ECM) and water. The ECM is made up of the cell fibroblast, which is responsible for synthesizing the other constituents of the ECM such as: collagen,

elastin, glycosaminoglycans (GAG), fibronectin and proteoglycans. These proteins give rise to the base of the connective tissue, maintaining its integrity, in addition to participating in the healing, elasticity, support and water retention of the skin (GOMES, DAMAZIO, 2017).

The dermis is divided into the papillary and reticular dermis (Figure 1). The papillary dermis is closest to the of the epidermis. It presents loose connective tissue, a fine network of elastin fibers and collagen thicker and wavy in a horizontal position. It has blood and lymphatic vessels, and has the function of connecting the basement membrane with the elastin fibers of the dermis. The dermis reticular or deep is formed by dense irregular connective tissue, with elastin fibers and thick collagen in a horizontal position, which guarantees support, strength, resistance and elasticity to the skin. This layer mainly contains type I collagen and we find structures derived from epidermis: hair, sebaceous and sweat glands, already mentioned above (ALVES, 2019; BERNARDO et al, 2019).

Figure 1: Dermal layer



Source: Mattos (2019)

The hypodermis is formed by adipose tissue and is responsible for thermal insulation and protection mechanical; stores energy in the form of lipids, has vascular networks and has an endocrine function, releasing adipokines. Beneath the adipose tissue is a thin layer rich in proteins fibrous layers of collagen and elastin called the superficial aponeurotic system, the SMAS (figure 2), responsible for supporting the face (PEREIRA et al, 2021).

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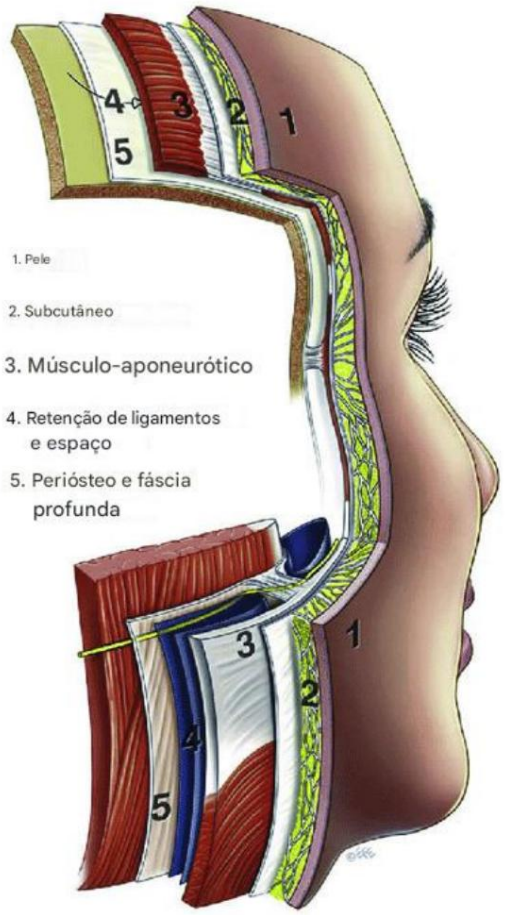
Figure 2: Location of the superficial aponeurotic system (SMAS)



Source: Fitzgerald et al (2018)

SMAS performs the contractions of the facial muscles, in which the more tense, the less energy for the muscle to transmit contractions. It performs the action of the muscles of facial expression, acting as a distributor of all facial muscle contraction to the skin. The human face has the ability to perform various facial expressions, which is the result of combinations of muscle contractions transmitted by the SMAS to the skin (CUSTÓDIO, 2021).

The SMAS is anatomically located in the frontal, parotid, infraorbital, zygomatic, nasolabial fold and lower lip. It is an organized fibrous network that connects the facial muscles to the dermis layer. It is a three-dimensional structure of collagen, elastin and and fat cells - adipocytes. This tissue has two morphologies. The first is that it is located on the side of the nasolabial fold with small fibrous septa that surround the adipocytes.

And the second is located medially to the nasolabial groove, in which it presents a dense mesh of collagen and muscle fibers (MANI, 2016).

2.2 SKIN AGING

As the years go by, the skin suffers a decline in all its functions. The following are evident: histological and macroscopic changes, calling this process skin aging. It is natural and physiological, occurring throughout the integument. The aging process occurs through two factors: intrinsic and extrinsic (FECHINE; TROMPIERI, 2012).

Intrinsic aging occurs chronologically due to the natural wear and tear of the organism, caused by age. It is inevitable, expected and progressive, which depends on time of life. The characteristics of the skin caused by intrinsic damage are sagging, thin, with little elasticity and has fine wrinkles, but does not present changes on the surface or blemishes (GOMES; DAMAZIO, 2017).

The extrinsic factor is caused by contact with the environment, affecting the skin and causing premature aging. These include exposure to ultraviolet radiation, pollution, smoking, poor diet and alcohol as examples of extrinsic factors (FECHINE; TROMPIERI, 2012).

Skin aging causes a decrease in muscle tone, loss of support caused by bone remodeling, the decrease in the volume of fat compartments and the facial sagging (PEREIRA, et al., 2021).

Of all the changes that occur during aging, those that occur in the skin are the most visible. They include wrinkles, tissue and muscle sagging, dryness, expression lines, the appearance of of furrows, dyschromias and dehydration (GOMES; DAMAZIO, 2017).

According to GLAUCO (2021) aging results in bone, muscle, fat and bone atrophy. surrounding tissues, which cause loss of volume caused by the action of free radicals and the decreased metabolism. This degradation is divided into upper, middle and lower facial thirds. The upper face includes the forehead, periorbital region and temples. Aging causes a flattening of the frontal arch, excess skin on the eyelids and the formation of dynamic wrinkles on the outer corners and the skin of the forehead. The middle face includes the cheek, where the process of Aging causes the soft tissue to migrate downwards, which accentuates the bone structure of the arch orbital and the formation of nasolabial grooves. The lower zone presents a mandibular contour in the

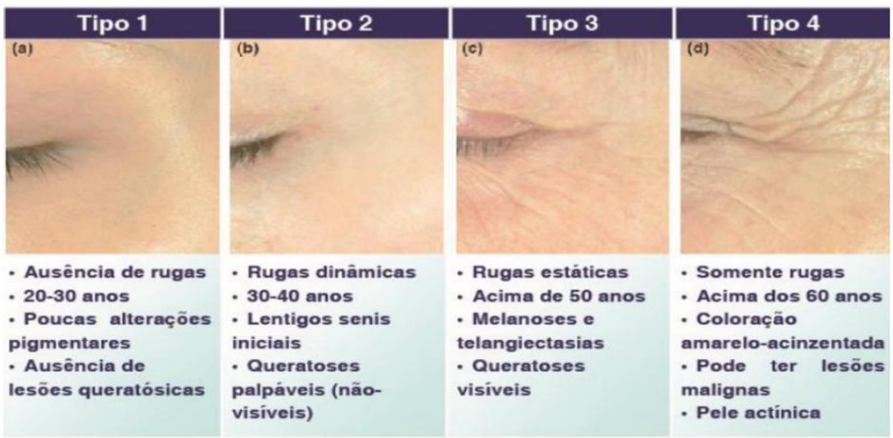
defined cervical chin and with aging, ptosis of the platysma muscle and fat cheek produces sagging over the jawline, called jowls.

Skin sagging is when muscle mass and bone density decrease in a way that continues after aging. Protein synthesis is also affected, which becomes slow leading to an imbalance between formation and deterioration. In the dermis, collagen fibers are thick, causing the elastin fibers to partially reduce elasticity, resulting in the skin loosening due to reduced muscle tension, causing sagging (VALÉRIO, 2021).

Wrinkles are characterized as flaws in the skin. Fine wrinkles appear due to more serious changes superficial in the epidermis, dynamic wrinkles can deepen into the dermis or through the entire thickness, and they occur due to the repeated folding of the skin, and can become static when they are visible without muscle contraction (ALMEIDA et al., 2018).

It also has gravitational wrinkles that are caused by the action of gravity and excess movement and decrease in collagen and elastin (CANTEIRO et al, 2022).

Table 1: Glogau Classification



Source: Callaghan and While (2008)

Based on the signs of skin aging, Richard Glogau presented a system of classification of wrinkles called the Glogau Scale (s/d), which demonstrates the four degrees of skin aging. This scale is used by professionals to classify the type of aging and indicate the best treatment (ESTEVES; BRANDÃO, 2022).

During aging, the superficial muscular aponeurotic system becomes attenuated, causing signs of aging on the face, the collagen present in the SMAS decreases, causing, combined with the action of gravity, nasolabial depressions, drooping of the eyebrows, double chin, wrinkles and nasolabial folds (COIMBRA et al, 2014).

Muscles age due to repeated muscle contractions. There is a decrease in the number and size of white fibers, which are responsible for rapid contractions, which causes a reduction in strength and elasticity. The muscles of the face stretch with aging, in which the range of movement decreases, resulting in skin folds and appearance of dynamic wrinkles (OLIVEIRA, 2022).

The demand for aesthetic procedures to combat aging has been growing day more and non-invasive procedures are safe and effective alternatives for those who do not undergo to conventional plastic surgery, making microfocused ultrasound an equipment in highlighted to treat facial rejuvenation (FRANCA; GOTARDO, 2023).

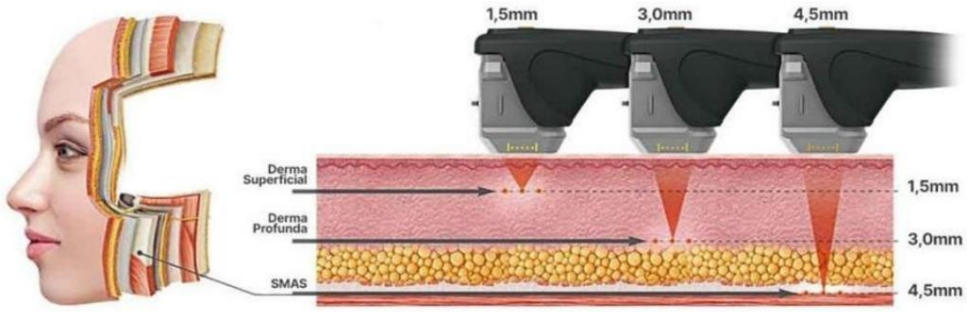
2.3 MICROFOCUSED ULTRASOUND

It is an electrotherapeutic device that emits oscillations through a transducer head. mechanical and kinetic, permeating them throughout the organism reaching different layers of the skin, causing thermal and non-thermal effects, used for aesthetic procedures, being a alternative to treat facial rejuvenation in a non-invasive way (AGNE, 2013).

Herus HIFU - High Intensity Focused Ultrasound - is an ultrasound technology microfocused that is present in the aesthetics market. Its action characterizes the emission focused on deeper layers of the skin, without damaging the superficial layers. Heating causes hot spots in the layers with a temperature of 60ºC that synthesize new collagen, a process called neocollagenesis, creating the lifting effect in the treated region. The Herus HIFU waves reach the dermis layer up to the superficial muscular aponeurotic system (FISMATEK MANUAL, 2016).

The technology generates an immediate modification in the collagen structure – denaturation - enabling its remodeling and neocollagenesis in its structure. This happens due to the breakdown of intramolecular hydrogen bonds, which contributes to the folding of collagen fibers resulting in its stability and thickness (SILVA; FERREIRA; NASCIMENTO, 2016). In the figure Below is the depth of the Herus HIFU cartridges into the skin layers.

Figure 3: Depth of interaction



Source: HIFU Manual (2016)

The technology is used in the face, chin and neck region, reaching a depth of 1.5 mm and 10 MHz frequency reaching the papillary dermis; 3.0 mm and 7 MHz, reaching the dermis reticular and 4.5 mm with 4 Mhz frequency that supplies energy to the musculoaponeurotic system superficial (GUTOWSKI, 2016).

To perform the procedure technique, it is necessary to delimit areas with markings, which include the cervical and malar region, the lateral and inferior orbits and the eyebrow region. Attention should be paid in the location of the facial nerves to avoid the risk of side effects, which are the nerves marginal of the motor mandible, supra orbital and temporal. The dashed width should be 2.5 cm. The choice of cartridges for carrying out the treatment is made according to the Glogau scale (FRANCA, GOTARDO, 2023).

For the 1.5mm depth cartridge, energy between 0.1 and 0.7J should be used, and at depths of 3.0mm and 4.5mm are between 0.8 and 2.0 J. The results of microfocused ultrasound are progressive, with the final result within 180 days after application, and can be recommended once per year, 6 months or 3 months reapplication according to professional evaluation (MANUAL FISMATEK, 2016).

Microfocused ultrasound treatment is contraindicated in skin lesions or infections. open areas in the area to be treated; severe acne; active implants such as pacemakers and defibrillators; metal implants in the treatment area; breastfeeding women; pregnancy; bone areas; abdominal hernia; coagulation disorder, tracheal or thyroid region, and for patients who have keloid, dermal fillers, smoking and the use of medication or factors that may alter or impair wound healing (TRIGUEIRO, 2020; FRANÇA; FRANÇA, 2020).

It is also contraindicated for those who use copper IUDs; resorbable threads before three months; autoimmune diseases; severe metabolic diseases; neurological diseases; diabetes decompensated; decompensated hypertension, hypo or hyperthyroidism (FISMATEK MANUAL, 2016).

Regarding adverse effects, SHOME (2019) states that they are transitory, in which they are erythema, edema and bruising. In addition, it says that there are uncommon adverse effects that are hyperpigmentation and marks that may be attributed to inadequate treatment technique.

MEYER et al (2021) mention that in the experimental study with 30 volunteers after the application of the treatment with microfocused ultrasound, 55% of the volunteers reported hyperemia, 93% reported pain and 43% had local hypersensitivity. No edema was observed in the study, bruising, hematomas and burns after application of the equipment.

FRANCA and GOTARDO (2023) say that microfocused ultrasound generates several benefits, which include the treatment of facial sagging, eyebrow arching, treatment of neck, chin, neck, upper lip, architecture and facial lifting. In addition, the equipment It allows you to treat all skin phototypes, regardless of the season, in a safe manner.

3 MATERIAL AND METHOD

This study was a bibliographic review, of an exploratory nature, in which the study and surveys on issues and problems surrounding the population, in order to generate a new vision on such panoramas (GIL, 2002).

The research was carried out following 3 stages, which were the guiding question, criteria for inclusion and analysis of selected articles. The guiding question is “How does ultrasound technology microfocused treatment for facial rejuvenation?”

The inclusion criteria were articles published in Portuguese and English; in the years 2012 to 2024, works that addressed integumentary tissue, facial aging and ultrasound microfocused.

For the survey of this study, the sample comprised the results of this research of thirty-two articles contained in the databases of Google Scholar, Scielo, PubMed, in addition to books on dermatology, human anatomy and physiology, and ultrasound equipment manual microfocused by FISMATEK.

The following keywords were used: skin aging, facial sagging, wrinkles and microfocused ultrasound. Research related to integumentary tissue was selected; the process of skin aging; dermis; collagen; superficial aponeurotic muscle tissue and the action of microfocused ultrasound in the treatment of facial rejuvenation.

The reviewed studies were evaluated according to methodology quality criteria, in which the objective of the study was observed; the study question; stages of the procedures

methodological; criteria and sample selection; data collection, and the presentation and discussion of the results.

4 RESULTS AND DISCUSSIONS

Four scientific articles with clinical analyses of the practice of microfocused ultrasound for the treatment of facial rejuvenation. Table (2) contains the information on the author's name, the year, the purpose of the study, the area of the face treated, the methodology and the results. For the selection of articles, studies that used ultrasound were included microfocused to treat wrinkles and facial sagging in Caucasian skin.

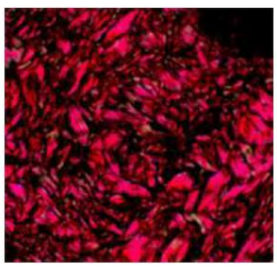
Table 2 - Clinical studies evaluating the results of microfocused ultrasound in facial rejuvenation.

Author/year	**Objective** To	**Treatment area** Frontal	**Methodology** The	**Result**
(2021)	identify the effect of ultrasound Meyer et al microfocused on facial rejuvenation, analyze the quantity and type of collagen after treatment, and analyze possible adverse reactions.	region, lateral region of the lower and upper eyelids, masseter and buccinator region, jaw, nasolabial fold, upper and lower lip, and orbicularis oris.	study included thirty volunteers who underwent a microfocused ultrasound session lasting ninety minutes. The 10 MHz cartridge was used with a depth of 1.5 mm, 7 MHz with a depth of 3 mm and 4 MHz with a depth of 4.5 mm; the energy ranged from 0.1 to 2.0 J. Two volunteers underwent rhytidoplasty surgery and the other underwent blepharoplasty surgery 45 days after the application of the equipment, during which skin samples were collected for histological and immunohistochemical analysis.	A visible clinical improvement was obtained in relation to sagging in facial symmetry, in the paralateronasal region and in the jaw region. There was an increase in the number of fibroblasts, inflammatory cells and blood vessels, in addition to the production of type I collagen. Adverse reactions were only transient hyperemia and complaints of pain during application.
Montezuma (2023)	To analyze the clinical efficacy of microfocused ultrasound for facial rejuvenation.	Middle third of the face.	The study included five volunteers aged between 30 and 65. 4.5 MHz transducers with a depth of 4.5 mm and 7 MHz with a depth of 3.0 mm were used, both applied to the same area.	There was a reduction in facial sagging and a lifting effect was achieved through tissue contraction and retraction caused by microfocused ultrasound, which lasted for five months after clinical observation.
Oliveira (2023)	To evaluate the effectiveness of microfocused ultrasound in the lifting effect and the duration of this effect after months of application.	Middle third and lower part of the face.	The clinical case was carried out on five volunteers aged between thirty and sixty-five years old with complaints of facial sagging, who were followed for four months, after the application of microfocused ultrasound and who answered a questionnaire about their satisfaction with the result after the procedure. The 3.0 mm and 4.5 mm transducers were used.	Facial sagging was reduced and a lifting effect was achieved after the application of microfocused ultrasound. It was observed that after four months, the lifting effect was still maintained, with sixty percent of the volunteers experiencing an increase in lifting over time.
Trombini (2023)	Effectiveness of microfocused ultrasound in facial rejuvenation.	Whole face and submandibular.	It was carried out on a female volunteer aged sixty-nine years. The transducer used was 4.5 mm and 3.0 mm in a single session to evaluate the lifting effect.	A facial lifting effect was observed in the volunteer in just one session, in addition to having an improvement in facial sagging.

Microfocused ultrasound is a technology used to treat expression lines and sagging skin facial, both on the face and neck, through tissue contraction and the synthesis of new collagen - neocollagenesis. Meyer et al (2021), describes that after the focused thermal action generated by the equipment there was an increase in the amount of type I collagen, in which figure 4 (a) shows the type III collagen (green coloration), and after application of the equipment (b) there was an increase in type I collagen (orange color) compared to type III collagen. The author also cites, according to figure 5, there was an increase in the size and number of fibroblasts, an increase in number of vessels and inflammatory cells, where in figure (a) the dermal layer is shown with the number normal fibroblast, vessels and inflammatory cells, and after application of microfocused ultrasound (b) there was an increase in the size and number of fibroblasts, an increase in the number of vessels and cells inflammatory. In addition, after the application of the equipment, there was also a change in the tissue adipose, in which thermal necrosis occurred in the tissue, in which the number of macrophages increased in the region, indicating a process of phagocytosis and destruction of adipose tissue, causing decrease adipocytes.

Figure 4: Collagen type analysis

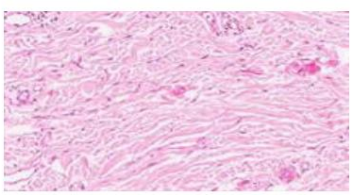
(the)



(b)

Source: Meyer et al (2021)

Figure 5: Analysis of fibroblasts, vessels and inflammatory cells



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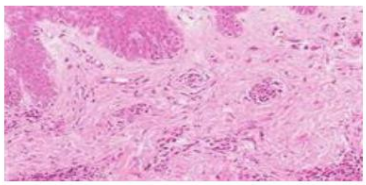
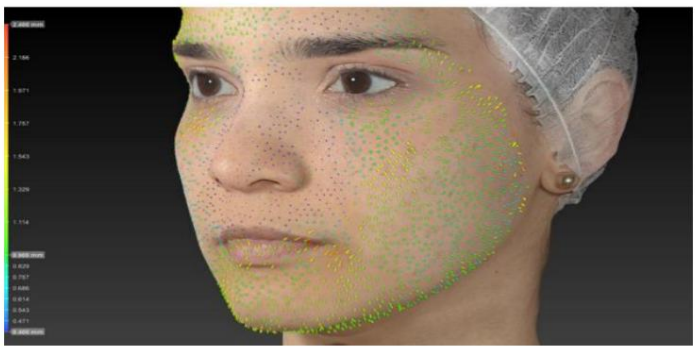


(b)

Source: Meyer et al (2021)

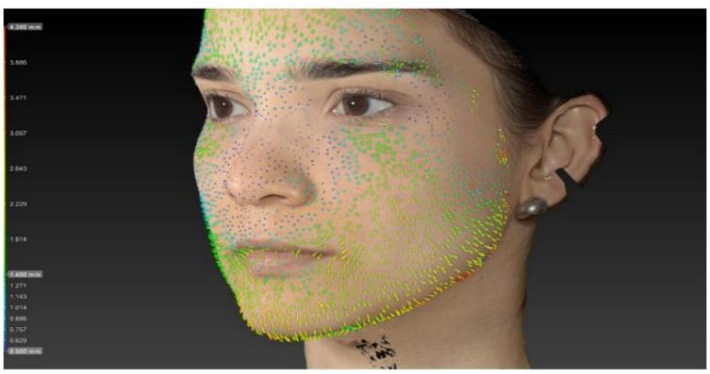
Oliveira et al (2023) also obtained positive results with facelift in their clinical study using microfocused ultrasound. The authors qualitatively evaluated, through photos before and after treatment of the volunteer evaluated. After four months of application of the microfocused ultrasound, the result was still maintained and there was an improvement in the muscle region zygomatic, masseter and mandible, as shown in figures 6 and 7. The volunteer reported positive satisfaction after using the equipment for face lifting. The authors also mentioned that the results can vary according to the amount of fat in the subcutaneous layer, with the classification of wrinkles, with sagging and other individual characteristics of each patient.

Figure 6: Immediate result after microfocused ultrasound



Source: Oliveira et al (2023)

Figure 7: Result after four months of application of microfocused ultrasound



Source: Oliveira et al (2023)

In a clinical study carried out by Montezuma et al (2023) significant effects were obtained and positive results with microfocused ultrasound for facial sagging, bringing satisfaction to patients. The author mentions that there were variable results on each patient's face, but that they also had variations on the right and left side of the face.

> The different amounts of facelift obtained in each patient are due to probably due to individual characteristics of facial sagging and tissue structure subcutaneous and amount of fat in these superficial compartments. The different lifting values on each side of the same patient, is probably due to the previous characteristics added to postural characteristics such as sleeping on one side particular to the face, which caused, on that side, greater deformation or tissue sagging. (MONTEZUMA et al, 2023, p. 275).

Microfocused ultrasound has the ability to perform thermal coagulation on tissue SMAS, which provides the necessary and adequate energy to perform contraction, hardening and lifting this tissue, obtaining the facial lifting (FRANCE, FRANCE, 2020).

The choice of non-invasive procedures for facial rejuvenation, such as the use of of microfocused ultrasound, has the advantage of rapid recovery, in which patients can resume your daily activities, without having to rest for weeks or even months after procedure, as is the case with surgeries. In addition, non-invasive treatments offer a personalized care, focused on the specific needs of each patient. The depth and intensity of microfocused ultrasound can be adjusted according to the facial characteristics of each individual, ensuring results more aligned with your expectations, bringing greater satisfaction after application (TROMBINI, SANTOS, 2023).

The use of microfocused ultrasound offers natural results compared to plastic surgeries that can cause drastic changes, leaving the patient's face superficial and disharmonious. The results of non-invasive procedures guarantee a more harmonious appearance. more harmonious, natural and authentic (NORTHINGTON, 2014).

Regarding adverse effects, studies describe that most patients had local hyperemia and pain during application. There was no trauma, edema, shock, bruising, bruising and burns when applying microfocused ultrasound, even though they are risk factors (TROMBINI, SANTOS, 2023).

FINAL CONSIDERATIONS

In the area of aesthetics, technological equipment has emerged with the aim of carrying out non-invasive, effective and safe treatments. Microfocused ultrasound is a device used to treat signs of skin aging, such as wrinkles and facial sagging.

Aging is something natural and progressive, due to external and internal factors that can contribute to its progress. With the aging process, expression lines and sagging tend to appear and end up being a nuisance for the individual, who ends up seeking treatment aesthetics to soften and prevent these signs.

Microfocused ultrasound is a technology that acts on the skin layer - deep dermis to the superficial aponeurotic system - producing new collagen and generating a facial lifting effect, through a focused thermal action, causing coagulation points.

Scientific studies prove that the use of microfocused ultrasound when it comes into contact with the skin tissue through thermal action, it ends up generating an increase in the number of fibroblasts, which are responsible for the synthesis of collagen, blood vessels and inflammatory cells. thermal action also produced and increased type I collagen, compared to type III collagen, proving neocollagenesis.

Furthermore, studies prove that the equipment makes a change in adipose tissue, in which the destruction of adipocyte cells occurs, after undergoing thermal necrosis, reducing the cells of fat.

Regarding adverse effects, studies report that hyperemia, pain and sensitivity in the The site of application of the equipment is what occurs most among patients, and there was no more serious risks such as trauma, shock, bruising and burns, making it a safe procedure.

Scientific studies state that the equipment generates satisfaction for customers who undergo it to rejuvenation treatment, making microfocused ultrasound an alternative safe and effective for treating signs of aging, bringing results such as the effect immediate lifting, mainly in the chin region of the face and neck, filling in the medial part of the face, reduction of wrinkles and facial sagging, being maintained even after 4 months.

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