Combination of Micro focused ultrasound and thulium fiber laser for orofacial harmonization treatment

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INTRODUCTION

The aim of this clinical study is to show the two protocols for face treatment. Micro focused ultrasound (MFU) and 1927 nm fractional thulium fiber laser (FTL) for facial rejuvenation . In the literature, several works confirm the mode of action of micro focused ultrasound acting at different depths of the dermis and Superficial Musculo-Aponeurotic System (SMAS), as well as the Thulium laser acts on the epidermis. The association of the two technologies allows for a global treatment of the face, acting on all layers, stimulating neocollagenesis and leading to a facial lift and improved texture.

FACIAL AGING

Facial aging is a multifactorial process that envolves intrinsec and extrinsic elements resulting in changes of the bone, soft tissue and skin in histological structure levels. Regardless each anatomical layer engage this process in different and separate ways and time, from the more superficial to the deeper layers, a change in one of them can have a cascade impact in the others. [1]

MICRO FOCUSED ULTRASOUND

Micro focused ultrasound (MFU) is a technology that uses ultrasound waves microfocused to a point in living tissue, molecular vibration results and heat is generated creating well-defined thermal injury zones at predetermined depths while leaving the surrounding tissue unaffected. This thermal modulation results in a increased number of fibroblasts, collagen, with a predominance of type 1 collagen and also increases the number of inflammatory cells and blood vessels. The combination of these mechanisms is responsible for the organization of the tissue at immunohistochemical and histological level, which orders the fibers and allows for clinical improvement in the appearance of the skin, with reduction of flaccidity and lifting effect. [2] The objective of this clinical study is to treat sagging skin, especially on the different regions of the face, neck and other body parts.

THULIUM NONABLATIVE FRACTIONAL LASER

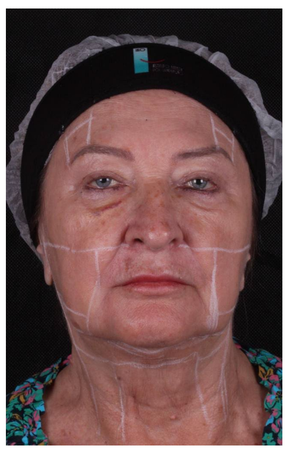
Thulium fiber laser (TFL) is a 1927 nm fractionated laser whose efficient targeting of tissue water, unlikely other lasers whose targeting of chromophore allows the treat of all photypes patients. With a superficial penetration depth of 250–300 µm and the potential for high-density coverage, it has been shown to be uniquely effective at reducing the superficial visible signs of moderate photoaging such as dyspigmentation, fine rhytids, and actinic damage. [3-10]

METHODS & MATERIAL

The following technologies and protocols were used in the treatment of the GBK patient:
Microfocused Ultrasound equipment, model Heros HIFU, 3 facial cartridges depth: 1.5 mm: 10 MHZ Dose 0.2J, 3 mm: 7 MHZ Dose 0.5J, 4.5 mm: 4 MHZ Dose 0.5J in Cheeks and upper neck region, In the Neck region, a 1.5 mm transducer was used: 10 MHZ Dose 0.2J, 3 mm: 7 MHZ Dose 0.5J and in the Periorbital region, a 1.5 mm transducer: 10 MHZ Dose 0.2J.

METHODS & MATERIAL

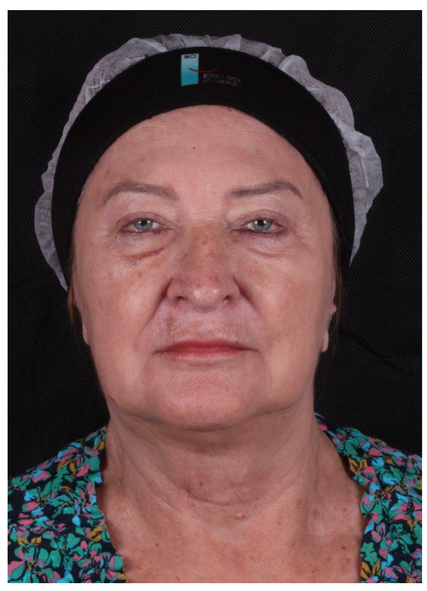
The thulium laser was used with a pulse duration of 750, energy of 7W, Distance of 0.7MM, continuous mode.
In addition to using these technologies, the patient underwent treatment with botulinum toxin, PLLA Biostimulator, PDO threads and filler with hyaluronic acid

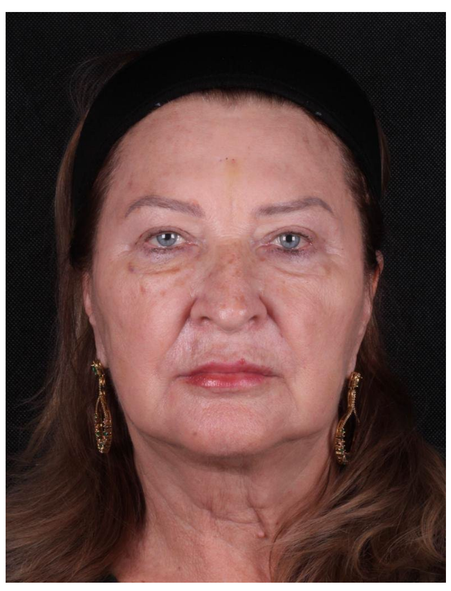


CLINICAL CASE REPORT

Patient GBK, 76 years old, sought care for facial rejuvenation at the dental office, where after clinical evaluation, photographic protocol and anamnesis, a treatment plan was proposed with the following procedures: Micro focused Ultrasound, Thulium Laser, PLLA Biostimulator, PDO threads, Botulinum Toxin. Aiming to treat all layers of the skin and cause a face lift.

RESULTS


INITIAL PHOTO


IMMEDIATE POST PHOTO

CONCLUSION

In this study is shown that the association of micro focused ultrasound and thulium laser technologies with other procedures of orofacial harmonization, potentiated the clinical result, as they managed to reach several layers of the skin, stimulating collagen, elastin, improving photoaging marks, pores, skin texture skin and also cause a non-surgical face lift.

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