

SIX MONTH FOLLOW-UP OF A NEW NONABLATIVE SKIN TIGHTENING DEVICE WITH A DYNAMIC HIGH REPETITION HEATING 1310 NM WAVELENGTH LASER

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SUMMARY

Recently, non-invasive devices have been introduced for skin tightening. Most of those device are done in static fashion way. This new device consists of combination of a near infrared laser high repetition rate pulses that peaks at 1310 nm wavelength with sapphire contact cooling, that permits a dynamic use of the hand piece. This procedure is done in motion working with a ascendants passes technique. 50 patients were randomized to receive NIR (Alma Lasers). A total of 4 treatments were performed, 2 weeks apart. Follow-up assessments were done at the day of the fourth session and 6 months after the first treatment. Responses and side effects profiles were documented with three-dimensional photography. No complications were observed and patient satisfaction was high. The study showed the safety and efficacy of this new device for the treatment of facial and cervical skin laxity.

BACKGROUND AND OBJECTIVES

Skin laxity is associated with chronological aging and exposure to solar radiation. The technology continues to evolve; procedures that once required major surgical intervention are gradually being minimized by adjuvant minimally or non-invasive techniques. Recently, non-invasive devices have been introduced for skin tightening. Most of those device are done in static fashion way. This new device NIR (Alma lasers) works with in motion technology to deliver uniform energy distribution. This technology with an 18 cm² spot contact cooling and peak emission at 1310 nm delivers high average power, low fluency, high repetition rate pulses to controlled increase the temperature of dermal tissue with a penetration depth at 3 to 6 mm. The procedure is done in motion working with a ascendant passes technique like shown in the figures 1 and 2 attached.

The purpose of this study was to evaluate the safety and efficacy of this new device for the treatment of facial and cervical skin laxity with a follow-up assessments done at final of the fourth session and 6 months after the first session.



Figure 1: Demonstration of **ascendant passes technique** used to treat the face and neck skin laxity.



Figure 2: Demonstration of **ascendant passes technique** used to treat the face and neck skin laxity.

STUDY DESIGN AND METHODS

Fifty patients with moderate laxity of the skin on the face or neck were randomized to receive NIR (Alma Lasers). Of these, 41 were females and 9 males, ages ranged from 29 to 87 years. A total of 4 treatments were performed 2 weeks apart. Exclusion criteria included photosensitive patients, pregnancy, and rosacea. All patients in the study finished the fourth sessions.

Treatment began with the use of a gentle cleanser and water to clean the area and setting the proper laser eye shields in the eyes, a thin layer of vegetable oil was distributed in the area to be treated. The energy used was between 60 W (skinny patient) to 80 W (fat patient) in a total of 30 kilojoules per treatment. The technique was used in the sense of motion ascendant passes, its very important to press the pedal only when the sapphire surface is in the contact with skin, in a dynamic fashion way to give enough time to cool the hand piece and prevent burns on the next pass. There is no guidance, no specific restrictions after application.

The responses and side effects profiles were noted by the investigator at each and at the final treatment. Results were evaluated by standard and three-dimensional photography (VECTRA 3D, Canfield) before and after the day of the fourth treatment (figures 3 and 4) and at 6 months after the first treatment (figures 5, 6 and 7). Both patient and physician investigator evaluation assessment of improvement were recorded using a grading scale of improvement ranging from I (no), II (less than 25%), III (26-50%), IV (51-75%), V (76-100%) (tables 1 and 2). Only grades IV and V were considered satisfactory.



Figures 3 and 4: Immediate response was documented with three-dimensional photography (VECTRA 3D, Canfield) after ascendant passes technique.



Figure 5: Six months response after the first treatment was documented with three-dimensional photography (VECTRA 3D, Canfield).



Figures 6 and 7: Six months response after the first treatment was documented with three-dimensional photography (VECTRA 3D, Canfield).

RESULTS

No complications were observed and patient satisfaction was high. The percent of patients and physician reporting grade IV or VI improvement laxity of the face was 76% and neck was 62% at the day of the fourth treatment, and 80% and 72% at 6 months, respectively (table 3). The discomfort was minimal. Side effects were limited to short-term erythema and edema.

Grade	Improvement after the fourth tt	face n (%)	Neck n (%)
I	None	0	0
II	<25%	6 (12%)	9 (18%)
III	26-50%	8 (16%)	10 (20%)
IV	51-75%	33 (66%)	29 (58%)
V	76-100%	5 (10%)	2 (4%)

Table 1: Description of the improvement after fourth treatment of the face and neck.

Grade	Improvement after 6 month of the first tt	face n (%)	Neck n (%)
I	None	0	0
II	<25%	5 (10%)	9 (18%)
III	26-50%	5 (10%)	5 (10 %)
IV	51-75%	34 (68%)	33 (66%)
V	76-100%	6 (12%)	3 (6%)

Table 2: Description of the improvement after 6 month of the first treatment of the face and neck.

Improvement Grade IV and V	face	neck
At the day of the fourth treatment	76%	62%
After six months of the first treatment	80%	72%

Table 3: Description of the improvement grade IV and V at the day of the fourth treatment and after six months of the first treatment of the face and neck.

CONCLUSION

In summary, with this new device that combination of a near infrared laser high repetition rate pulses that peaks at 1310 nm wavelength associated with ascendant passes lifting technique proved to be consistent in safety and efficacy for the treatment of facial and cervical skin laxity.