

Radiofrequency for Facial Skin Tightening

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Introduction

Radiofrequency dermal heating devices have recently emerged as an effective, non-invasive, aesthetic treatment modality to improve the appearance of textural imperfections, to eliminate face wrinkles and rhytids, to tighten lax skin and reduce face and neck skin laxity. Radiofrequency devices heat under the skin by passing rapidly oscillating electrical currents through the tissues. In monopolar devices current is passed between a small electrode in contact with the treatment area and a large return electrode pad, usually placed under the buttocks, while with bipolar devices the current is passed between two electrodes in contact with the treatment area. Bipolar devices offer better control over the treated tissue volume and require lower powers to heat up a specific volume of under skin. With bipolar devices skin heating depth is a function of the distance between the electrodes, the RF power and the dwell time over the same tissue area. By proper adjustment of these parameters both the dermis and subcutaneous layers can be heated to therapeutic levels while preserving the epidermis. Treatments can be performed with absolutely no downtime and can often result in dramatic changes in skin texture. Face, neck, arms, abdomen, buttocks and thighs are all amenable to RF treatments.

Radiofrequency aesthetic face skin tightening treatments have been documented to be extremely safe with only minimal and transient side effects such as erythema and slight edema. To maintain this level of safety it was found that anesthesia should be avoided to allow patient feedback regarding pain and heat sensation, which is totally bearable and even pleasant.

Heat produced by RF in the dermis and subcutaneous layer causes immediate tightening of collagen and induces new collagen production. Increase in local blood circulation, promotes fibrous tissue breakdown. Increasing the temperature of the skin cells by 10°C, above 43°C, results in protein (collagen fibers) denaturation. All these mechanisms contribute to the skin tightening effects, skin texture improvements, and reduction in the appearance of hyper-laxity skin, all of which have been demonstrated in clinical studies with various RF devices. In these studies facial areas usually required a minimum of 6 weekly or bi-weekly 30 minutes sessions.

Patients usually feel the skin tightening effect immediately following each treatment however the full result becomes evident following the end of the minimum recommended treatment sessions due to the build up of new collagen in the area. Results are expected to last 1 years and maintenance treatments can be continued on a regular basis or repeated as desired by the patient.

Finally, RF treatments can be combined with a variety of aesthetic skin texture complimentary techniques ranging from cosmetology external products and other phototherapy technologies as Infrared and Lasers and even as a maintenance tool after hialuronic fillers and plastic surgery.

Materials and Methods

A new bipolar RF handpieces for the Formax Plus and Omnimax Aesthetic Stations has been tested on twenty (20) volunteers, 14 females, 6 males, ages between 25 and 45, with face lax skin/ The circular, bi-polar handpiece used in this

study operates at a frequency of 1 MHz and a diameter of 7.5 cm.

The twenty (20) volunteers received eight (8) treatments, once a week. This handpiece emits continuous RF powers of up to 50 Watts. Time of the treatment sessions on the area treated: face and neck around 30 minutes. A non-contact infrared thermometer was used to monitor external skin therapeutic temperature during sessions in order to maintain a constant 40°C during all the treatment session. Standardized photographs were taken at baseline, before each weekly treatment and at the 1 month follow-up visit. Patient satisfaction scores were also recorded at each visit. Each session's data was file for posterior comparative objective evidence.

Redness and heat sensation lasting for about 30 minutes after the session



SLT RF FACE
handpiece

Results

At 1 month after the last treatment, 90% of the subjects exhibited moderate to significant improvement in skin laxity and skin texture of face and neck. A significant subjective reduction in skin laxity was appreciated following RF treatments. Areas showed marked improvement. Patients reported high overall satisfaction with the treatment. No serious complications were recorded.

- Face and neck had a positive subjective evaluation after 8 treatments.

Patient satisfaction scores:

- Very satisfied 80 %
- Satisfied 15 %
- Not satisfied 5 %

Conclusion

The new bipolar RF handpieces for Sharplight's Aesthetic Stations has been demonstrated as highly effective and safe for non-invasive skin tightening. Quantitative and qualitative results were documented in the treatment of face and neck skin laxity. Very high patient's satisfaction was achieved.

The procedure is easy to apply, involves no discomfort to the patient and requires no downtime whatsoever. Clearly visible results were obtained after only eight weekly sessions, with improvement continuing after treatments were discontinued.

Further treatment sessions or periodic maintenance sessions are recommended and may be administered as required or desired by each individual patient.

The availability of this new RF handpiece significantly enhances the capabilities of the SLT Aesthetic Stations, broadening its clinical indications to include face and neck evident skin tightening.

B/A PHOTOS

Before



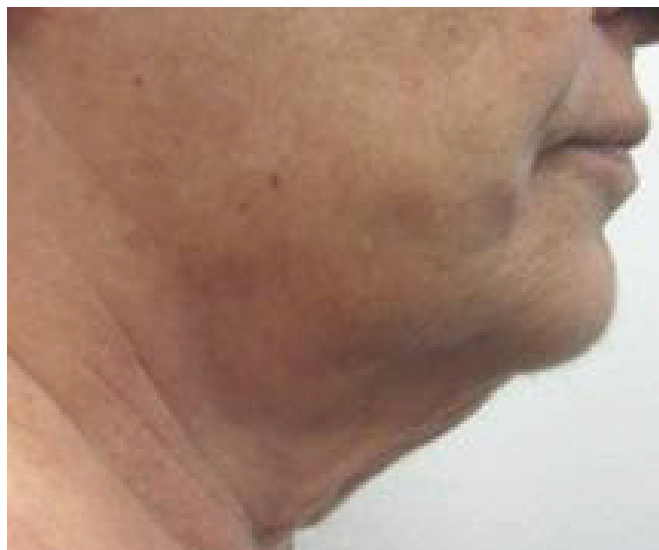
After 8 sessions



Before



After 4 sessions



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