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COMMENTARY

Commentary: Advanced Radiofrequency for Facial Rejuvenation

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For several decades, the facelift operation has been the gold standard for evaluating facial rejuvenation procedures. For the most part, discussions and opinions among facelift surgeons relate to how to best manage the superficial musculoaponeurotic system and the platysma muscle to deliver the best aesthetic result. Excess skin can be removed, and volume added by fat or fillers to enhance the desired appearance of rejuvenation. However, there are no face lifting techniques that provide any rejuvenation of the skin of the face and neck. Ancillary procedures such as dermabrasion, chemical peels, and ablative lasers do not rejuvenate skin. In fact, they are all technically destructive to the skin. Advanced radiofrequency (RF) technology provides biological structural skin rejuvenation.

In my practice, I have not used dermabrasion nor deep peeling agents (phenol, croton oil) for >15 years. I have used no lasers since 2019. I do use trichloroacetic acid (25–35%) for specific indications.

In 2017 I began using InMode's advanced RF technology, which does change the structural biology of the skin by controlled heat application. There are two RF delivery methods, bipolar RF and fractional bipolar RF. The minimally invasive FaceTite and AccuTite cannulas direct electrical current from their internal tip to an external electrode connected by the handpiece. As current is applied, the heat coagulates subcutaneous fat in proximity to the internal cannula and denatures the reticular dermis but preserves the papillary dermis.

The controlled heating allows for immediate tightening of the collagen triple helix by a breakdown of hydrogen bonds in the collagen, causing shrinkage of the normal collagen structure, as well as induction of the healing cascade, leading to neocollagenesis, elastin remodeling, and angiogenesis during the following 3–4 months. Thus, the application of heat tightens the fibroseptal network and serves to contract the overlying skin uniformly.[1]

The fractional bipolar RF deploys RF emitting needles at variable programmable depths and energies depending on the region being treated. Fractional bipolar RF can induce three types of effects: (1) minimal superficial ablation for dyschromia and rhytids, (2) controlled dermal coagulation for tissue renewal, and (3) overall volumetric heating for collagen stimulation. Fractional photothermolysis (lasers) heat causes thermal injury that tapers as it descends deeper. In contrast, fractional bipolar RF creates zones where heat delivery is narrow at the epidermis with conical enlargement as the needles descend. When the RF needles penetrate deep into the dermis, there is a molding component of the subdermal adipose tissue that is termed subdermal adipose remodeling.

The two articles in this supplement by (1) Demetri Arnaoutakis et al. ''The Role of Subcutaneous Radiofrequency-Assisted Liposculpture in the Facial Plastic Surgeon's Practice''[2] and by (2) Isabelle Magro et al. ''Transcutaneous Radiofrequency Microneedling and the Facial Plastic Surgeon's Practice: A Review''[3] must be read. These two articles described in complete

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detail the background and history, technical overview, indications, contraindications, technique, and results obtained with FaceTite, AccuTite, subcutaneous bipolar RF cannulas, and Morpheus transcutaneous bipolar RF fractionated microneedling. I urge the reader to absorb the details of these two reports completely. They are superb and provide the information you need to know.

A colleague Dr. Michael J. Stein and I have two articles recently submitted for publication (1) Radio Frequency Assisted Facial Rejuvenation: Beyond the Treatment Gap[4] and (2) Ancillary Procedures to Facelift Surgery: What Has Changed.[5] These articles provide in-depth information regarding using FaceTite, AccuTite, and Morpheus RF in my practice.

Today ~70% of our facelift patients have RF in conjunction with their surgical procedure to improve skin quality and deliver real skin rejuvenation. This often consists of AccuTite and Morpheus to reduce large nasolabial folds and/or improve skin quality of the anterior face and jowl area. Morpheus treatment to the face and one or more areas such as the forehead, periorbital region, perioral area, neck, and submental area is frequent. The initial Morpheus treatment begins the skin rejuvenation process.

The skin quality and appearance improve over time. For most patients, we recommend three to four treatment sessions performed in the office using topical or local block anesthesia. A meaningful RF microneedling treatment can be done with the patient being able to return to work or social engagements the same day or the next day.

In today's society, wherein patients want changes and improvements but no downtime, Morpheus provides an excellent sequential improvement over time and patients are happy to return for subsequent treatments. There is minimal to no downtime, but the skin rejuvenation is real. New collagen formation and skin improvement cannot occur overnight. I tell patients their skin will have an improved appearance initially, but it will get even better over 4 to 6 months. Patients confirm this occurs.

Now that real skin structural rejuvenation is possible, it is time to consider that the gold standard for facial rejuvenation procedures is a facelift with structurally rejuvenated skin.

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