

The Use of Hybrid Radiofrequency Device for the Treatment of Rhytides and Lax Skin

DAVID J. FRIEDMAN, MD,* AND LEON T. GILEAD, MD, PHD*†

BACKGROUND Recently, radiofrequency (RF) devices have been introduced and commercialized for nonablative procedures in dermatology and plastic surgery for the treatment of age-related rhytides and lax skin.

OBJECTIVE The objective was to assess the efficacy and safety of a novel RF device (Accent, Alma Lasers, Ltd, Caesarea, Israel) for the treatment of rhytides and lax skin.

METHODS AND MATERIALS Sixteen female patients (age range, 29–66 years; mean, 47 ± 6 years; skin phototypes II to IV) were treated with Accent system. Patients were treated on the chin ($n=5$), forehead ($n=8$), cheeks ($n=12$), jowl lines ($n=9$), periorbital area ($n=7$), marionette line ($n=3$), and nasolabial folds ($n=6$) for wrinkles ($n=27$ cases) and skin laxity ($n=23$ cases). Patients received two to six treatments (mean, 4.3 ± 1.1), with the time interval of 2 to 3 weeks. Photographs were assessed 1 month after the last treatment.

RESULTS For wrinkles and skin laxity, in 5 patients (42%), the cheeks ($n=12$) scored 51% to 75% (significant improvement), and 2 patients (17%), 76% to 100% (excellent improvement). For the jowl lines ($n=9$), 4 patients (44%) scored 51% to 75% (significant improvement), and 1 patient scored 76% to 100% (excellent improvement) for lax skin. For wrinkles on the periorbital ($n=7$) and forehead areas ($n=8$), three patients (37%) scored 51% to 75% (significant improvement).

CONCLUSION The Accent system is an effective and safe modality for the improvement of age-related rhytides and lax skin.

The radiofrequency device used in this study was loaned by Alma Lasers, Ltd.

One of the significant advances in facial cutaneous laser surgery in the past few years has been the proliferation of radiofrequency (RF) technology to provide nonsurgical, nonablative means for the improvement of age-related rhytides and lax skin and acne vulgaris.¹ Although proven effective, dermabrasion, chemical peels, and laser resurfacing (CO₂ and erbium) techniques waned significantly because of pain, substantial posttreatment “downtime,” and prolonged recovery period. In fact, the potential risks associated with ablative laser therapy paved the way to the nonablative RF technologies.²

RF energy is a form of electromagnetic energy ranging from 300 MHz to 3 kHz. RF affects skin by emitting high-frequency radio waves that mimic the thermal effects of lasers and intense pulsed light

sources. RF is similar to optical energy in that it interacts with the tissue to produce a thermal change. Unlike lasers, however, which induce heat by selectively targeting particular chromophores, nonablative RF devices generate heat as a result of tissue resistance to the movement of electrons within the RF field.^{3–5}

The delivery of RF energy is thought to induce dermal heating to the critical temperature of $\sim 65^\circ\text{C}$, causing collagen to shrink and allowing wound healing with a subsequent contraction. In the skin, RF radiation provokes significant thermal effects at a particular depth based on the electrode configuration—monopolar (deep) and bipolar (superficial). With a controlled delivery of RF energy to the dermal and subdermal layers, the RF technology (monopolar and bipolar) has demonstrated an ability to stimulate

*LaseOhr Dermatology Cosmetic Laser Institute, Jerusalem, Israel; †Department of Dermatology, Hadassah University Medical Center, Ein Kerem, Jerusalem, Israel