

CASE REPORTS:

SKIN TIGHTENING WITH A COMBINED UNIPOLAR AND BIPOLAR RADIOFREQUENCY DEVICE

Flor A. Mayoral MD

Flor A. Mayoral Dermatology Group, South Miami, FL

Abstract

Monopolar radiofrequency (RF) devices are well established treatment modalities for tightening facial skin. A 60-year-old woman presented with a desire to tighten the lax skin and improve the appearance of both upper arms. A combination unipolar and bipolar RF device may provide volume reduction as well as skin tightening in the upper arm.

Introduction

A variety of clinical studies have documented the ability of capacitively coupled monopolar radiofrequency (RF) energy (ThermaCool TC, Thermage, Inc., Hayward, CA) to noninvasively tighten facial skin by volumetric heating of the dermis. Other tissue-tightening RF devices are combinations in which bipolar RF energy is combined with diode laser energy^{1,2} or with both diode laser and intense pulsed light energies.³

The Accent (Alma Lasers, Inc, Ft. Lauderdale, FL) RF system is designed for continuous skin contact using 2 handpieces: the unipolar to deliver RF energy to the subcutaneous adipose tissue for volumetric heating and the bipolar to deliver RF energy to the dermis for nonvolumetric heating. This case study compares the efficacies of the ThermaCool and the Accent in the treatment of skin laxity in the upper arm.

Case Report

A 60-year-old woman (Fitzpatrick skin type III) presented with a desire to tighten the lax skin and improve the appearance of both upper arms. The patient had a history of breast cancer 4 years earlier and had been treated by lumpectomy.

The right arm was treated with the ThermaCool device. Exposure duration and cooling during each exposure period were controlled by a 3-cm² treatment tip. The patient's upper arm received 1200 pulses. Treatment settings were adjusted on the basis of patient feedback on discomfort (0-4; 4 = intolerable). Settings were changed when the discomfort level reached 2.5. Settings were 351.5 on the inner arm and 353.5 to 354.0 on the outer arm. The patient received a minimum of 6 passes on the inner arm and a minimum of three passes on the outer arm.

Due to the lengthy 2-hour duration of ThermaCool treatment, the author suggested that the left arm receive a single treatment with the Accent RF system. The patient was informed that the Accent RF system would require multiple treatments to achieve results. The patient consented to treatment with the ThermaCool on her right arm and a 30-minute treatment with the Accent on her left arm to see if the 2 devices would produce different results.

Using the unipolar (Accent) handpiece, the author treated the left arm to a maximum temperature of 42.5°C. The electrode tip was cooled during treatment to prevent thermal damage to the epidermis.⁴ Three additional passes were done to maintain the treated area at the therapeutic temperature, as recommended by the manufacturer. The patient received no anesthesia, pretreatment care, or post-treatment care with either RF device.

Approximately 2 months later, the patient returned for evaluation of both upper arms. The skin of the ThermaCool-treated arm showed improvement in texture and smoothness as well as reduced wrinkling, especially on the inner part. The Accent-treated arm showed no differences. The patient was reminded that to compare the devices, she needed to have additional Accent treatments at 2-week intervals because the ThermaCool skin-tightening protocol calls for a single treatment with evaluation 4 to 6 months after treatment and the Accent protocol calls for multiple treatments.

Pre- and post-treatment photographs are shown in Figures 1 to 3. After the initial treatment session, the patient had 5 additional treatments at 2-week intervals with the Accent on the left arm (Figure 1) and no additional ThermaCool treatments on the right arm (Figure 2). On the seventh visit, the patient had had 6 Accent treatments on her left arm and a single ThermaCool treatment on her right arm 5 months earlier. The patient was pleased because her clothes no longer felt tight on her left arm. Although skin texture had improved in both upper arms, the skin of the Accent-treated arm was tighter and firmer (Figure 1). Photographs were taken of both arms during this visit and before the left arm received the seventh Accent treatment.

The patient continued to receive Accent treatments on the left arm at 2-week intervals while the right arm remained untreated. These Accent treatments were given with a combination of the unipolar and bipolar handpieces. After a total of 9 Accent treatments of her left arm, the patient asked the author to treat her right upper arm with the Accent device. The right ThermaCool-treated upper arm after 2 Accent treatments is shown in Figure 3. The patient was very satisfied with the improved tightness and firmness of her right upper arm. The patient commented that after