

Tissue tightening: a hot topic utilizing deep dermal heating.

Aesthetic Practice Trends is a periodic feature that will give readers updates on topics involving everyday clinical practice issues from how to run a successful dermatology practice to marketing and advertising ideas, and trends. It will also provide additional coverage on lasers, light sources, and other energy-based devices as well as fillers, toxins, and the latest in skin care needs for your patients. Each column will have a central topic relevant to aesthetic dermatology and ideas to help improve your daily practice.

Abstract

The US market has seen a rapid growth in new radiofrequency (RF) devices over the past several years, all for the benefit of our patients. This column will summarize the various types of RF devices currently available and review their technologies for a nonsurgical approach to tissue tightening. Further clinical trials are necessary to demonstrate the efficacy as well as safety of RF devices for tissue tightening so that we can treat our patients with devices that truly work and provide the desired results.

Introduction

The concept of noninvasive skin tightening is one of the most talked about energy-based discussions at recent dermatology laser meetings. A device that utilizes radiofrequency (RF) current or a light source targeting water as its chromophore will sell without a great effort on the part of the manufacturer. As always, clinical trials will be needed to demonstrate efficacy as well as safety.

When RF was first introduced as a skin tightening device, many of us wondered if it was only a fad that would soon disappear. Almost 10 years later, we are still talking about skin tightening, RF energy is still here, and several devices are utilizing it. Some of the many skin tightening devices on the market are listed in Table 1.

All skin tightening devices work via a similar mechanism. By delivering enough heat through RF or light-based energy deep into the dermis, they create both mechanical and biochemical effects that lead to an initial contraction of the collagen fibers followed by a well-documented wound response with dermal remodeling and ultimately neocollagenesis. In order to successfully deliver enough energy deep enough into the dermal tissues to cause an effect the skin must be sufficiently cooled prior to, during, and after the therapy. The laser/RF companies that are producing these devices are spending considerable time and effort to assure adequate cooling of the skin for this therapy to be safe.

Before discussing individual machines, we need to mention patient and physician expectations for these treatments. Will this replace a surgical face lifting procedure and will it work on everyone? How long will the procedure last and will it hurt? These are questions that should be addressed honestly. One of the biggest drawbacks to this procedure, when it first came on the market, was the pain involved in the treatment, which required heavy sedation or frank anesthesia. Through efforts of some very good clinicians, new treatment parameters have reduced the amount of pain involved, and most of these therapies can be performed under topical anesthesia at this time.