

## SPECIAL REPORT



# RF heating promising for skin-tightening, browlifting

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**Atlanta** — Radiofrequency heating appears to have significant potential as a noninvasive method for achieving tissue tightening, although further study is needed to develop optimum parameters for such use, said Richard E. Fitzpatrick, M.D., at the annual meeting of the American Society for Laser Medicine and Surgery.

His conclusion was based on experience from a study designed to evaluate the safety



Dr. Fitzpatrick

and efficacy of higher fluence treatment with the radiofrequency device (ThermaCool TC System) for browlifting and improving wrinkles in the periorbital area. Energy was applied into squares of a grid drawn onto the forehead and temples, and the treatment was

found to result in noticeable brow elevation. That benefit was observed within one month after treatment and the magnitude of the effect was more pronounced when using fluences greater than those tolerated under topical anesthesia alone.

"Browlifting is an interesting result of the radiofrequency treatment, and it was marked enough in some patients so that laxity of the upper eyelid was decreased. Our experience indicates it is possible to safely raise the energy level to improve the outcome without causing damage to the

underlying tissue. However, we are still just beginning to understand this new approach to noninvasive lifting and have yet to refine what the parameters should be," said Dr. Fitzpatrick, associate clinical professor of medicine/dermatology, University of California at San Diego, and private practitioner, La Jolla, Calif.

Initial patients were treated with energy levels of 110 J/cm<sup>2</sup> using topical anesthesia to minimize discomfort, but pain became a limiting factor when attempting to raise the treatment fluence. With nerve block anesthesia, however, it was possible to increase the energy to 130 J/m<sup>2</sup> with good tolerability.

Previous histological studies performed on skin being removed at abdominoplasty suggested the safety of using higher energies. While there was some remaining theoretical concern regarding the potential for thermal-induced injury applying higher frequencies to thinner facial skin, clinical evaluations in the periorbital treatment study identified no adverse responses beyond discomfort and transient redness, Dr. Fitzpatrick said.

The mechanism for the tissue tightening remains to be determined. However, Dr. Fitzpatrick noted that because there are no visible skin wounds, the effect is likely to be related to changes in the deep fascial plane rather than in the surface layers of the skin.

He added that the potential for the radiofrequency procedure to achieve skin contraction and tightening has previously been reported by Javier Ruiz-Esparza, M.D., Encinitas, Calif. Dr. Ruiz-Esparza is currently investigating this technique for tight-

ening the cheeks and improving the appearance of the nasolabial fold and has noted as well that radiofrequency treatment applied to the upper chest is associated with elevation of the areola and nipple.

"This is a very interesting phenomenon because it not only offers the opportunity to do lifts of traditional areas, such as the neck and cheeks, with a noninvasive, lower risk technique, but it also has the intriguing potential for performing lifting procedures in areas that are difficult to approach surgically, such as the arms, legs, and buttocks," Dr. Fitzpatrick said.

With the approach used for radiofrequency energy delivery in this study, there was no significant benefit on the appearance of crow's feet lines.

"What we learned in this investigation was that the effect of the treatment occurs at a very specific orientation to the site of treatment. In this study, the energy was being applied along the periphery of the crow's feet lines with the idea that it might be possible to improve their appearance through a secondary, radial tightening effect. However, it seems that if we hope to use this technique to eliminate crow's feet, the energy would have to be applied to cause tightening perpendicular to the direction of the lines," Dr. Fitzpatrick said.

The radiofrequency device used in this study is a product of Thermage, Hayward, Calif. It is currently FDA cleared for electrocoagulation and hemostasis and is being investigated for cosmetic indications. Dr. Fitzpatrick has no financial interest in that company. **CST**