

Cosmetic Surgery Times

Where the Exchange on Aesthetic Perspective Begins

MAY 2002 • Vol. 5, No. 4 (02)

Noninvasive skin toning, rejuvenation uses laser duo

By Coriene Hannapel
Staff Correspondent

Walnut Creek, Calif. — Combined treatment with a 532-nm KTP laser and a 1064-nm long-pulsed Nd:YAG laser decreased redness and pigmentation, in the appearance of rhytides, in skin tone, and in texture, reported dermatologist Min-Wei Christine Lee, M.D.



Dr. Lee

“By combining visible light with infrared light, we take care of noticeable coloration defects, and also provide the skin toning and tightening and texture improvement that patients are seeking,” said Dr. Lee, author of a study, which, she added, is the first to evaluate this laser combination.

“Noninvasive techniques for skin rejuvenation are being quickly established as a new standard in the treatment of mild rhytides and overall skin toning,” said Dr. Lee, director, East Bay Laser & Skin Care Center, Walnut Creek, Calif., and clinical instructor at University of California, San Francisco. “The one common ingredient every skin rejuvenation procedure has right now is a claim to make more collagen.”

Dr. Lee found that patients want to have improvement in their color defects and they also want to have better skin tone and texture — and they want it in one procedure. By combining two lasers, she has been able to provide these results.

The study group included 150 patients with skin types I through IV. They ranged in age from 21 to 65 years.

Patients presented with a variety of problems, including rosacea, melasma, sun damage, acne scars, poor skin texture, wrinkles, or a combination of these problems.

“All patients showed improvement after the treatment,” Dr. Lee said. “This procedure has been the best for dark circles and crepiness under the eyes. It helps collagen tighten and tone, reducing sagging.”

Three treatment groups

Patients were divided into three separate groups. One third received treatment with the variable pulse KTP 532 nm (Aura, Laserscope) only, one-third was treated with the long-pulsed Nd:YAG 1064 nm (Lyra, Laserscope) only, and the remaining third received combination therapy.

For both lasers, energies were adjusted based on skin color, Dr. Lee explained.

Fluences for the KTP varied between 7 and 15 J/cm² at 7 to 20 msec pulse duration with a 2-mm handpiece and 6 to 9 J/cm² and 30 msec with a 4-mm handpiece.

The long pulse Nd:YAG fluences were 24 J/cm² for a 10-mm handpiece and 30 J/cm² for a SmartScan Plus scanner. Energies were sent at 30-msec pulse durations.

For each treatment, patients were assessed and photographed. The dual procedure included a first pass with the Aura 532 KTP with a 2-mm spot size, Dr. Lee said. The green wavelength is absorbed by melanin and oxyhemoglobin, so visible defects such as pigmented lesions, freckles, and blood vessels are targeted, she added. “On the first pass, I’m going after individual spot lesions with the 2-mm handpiece.”

The second pass with the KTP is done with the larger 4 mm spot size. “This allows



Patient, who was in the combined therapy arm of the study, is shown before (left) and six months after six laser treatments.

me, with the cooling device, to paint over their entire face, so that it will also take care of all the microvasculature,” Dr. Lee said.

This procedure is particularly effective for people with rosacea, she added. Individuals with ruddiness and areas of “blotchiness” also respond very well to the KTP.

The third pass is made with the long-pulsed Nd:YAG 1064 nm infrared laser. “This laser has a deeper level of penetration, so it is not really targeting anything, but at the fluences that I was using, lower than what is used for hair removal, it actually stimulates collagen production,” Dr. Lee said. “This is more of a progressive type of phenomenon. You actually see more collagen stimulation with more treatments.”

The KTP also stimulates collagen in the papillary dermis. Together, the two have a synergistic effect on collagen remodeling.

Three to six treatments were given and patients were observed between three and six months after the last treatment. “The best results are not seen for a few months because the collagen remodeling that occurs with combining the two lasers can continue for up to a year after the last treatment,” Dr. Lee said.

Results were recorded after three to six treatments and indicated that the KTP used alone was superior to the Nd:YAG laser, Dr. Lee said, and the KTP and Nd:YAG laser combination was superior to either laser used alone.

The group of 50 patients who were treated with the KTP laser alone showed 70 to 80 percent improvement in redness and pigmentation, 40 to 50 percent improvement in skin tone/tightening, 30 percent to 40 percent improvement in skin texture, and 20 to 30 percent improvement in rhytides.

The 50 patients who were treated with the Nd:YAG laser alone showed 10 percent to 20 percent improvement in redness, 0 percent to 10 percent improvement in pigmentation, 10 to 30 percent improvement in rhytides, 10 to



Patient, who was in the combined-therapy arm of study, is shown before (left) and six months after three laser treatments. (Photographs courtesy of Christine Lee, M.D.)

30 percent improvement in skin tone/tightening, and 20 percent to 30 percent improvement in skin texture.

The group treated with both the KTP and Nd:YAG lasers showed 70 to 80 percent improvement in redness and pigmentation, 40

to 60 percent improvement in skin tone/tightening, 40 to 60 percent improvement in skin texture, and 30 to 40 percent improvement in rhytides.

Skin biopsies taken at one-, two-, three-, and six-month intervals for all groups demonstrated new collagen formation.

Dr. Lee has also treated patients with type V and VI skin successfully with this combination procedure, which she also used for rejuvenating entire bodies, not just the face.

“This dual laser procedure is particularly effective at clearing the neck of poikiloderma,” Dr. Lee said. It also helps to tone and tighten the skin in this area.

Dr. Lee has no financial interest in the products or company mentioned. CST