

Assistance in liposuction appears effective

Low-Level Lasers Warrant Study

Denver — Low-level lasers could provide a safe, effective option for surgeons performing tumescent liposuction, Kimberly J.



Dr. Butterwick

Butterwick, M.D., said at the American Academy of Cosmetic Surgery's World Congress on Liposuction. Her conclusions were based on preliminary data from a multicenter double-blind side-by-side comparison study

she conducted in conjunction with colleagues Ed Lack, M.D., and Neil Sadick, M.D.

By definition, low-level-laser therapy causes no immediate temperature increase in treated tissue. "There's no heat," Dr. Butterwick said, "and there's no visible physical change in the tissue structure" as one applies treatment, which typically is done with semiconductor diode lasers in the 600 nm to 800 nm range.

Developed decades ago for plant-growth experiments conducted in space, low-level-laser energy has been shown to have biostimulatory effects, especially in the 630 nm to 640 nm range. "Here it's been shown to increase proliferation of keratinocytes and fibroblasts and to increase microcirculation," Dr. Butterwick said. "In many studies, it's been shown to promote wound healing in human and animal models."

Low-level lasers have been used in pain relief for dentistry and physical therapy for more than 30 years, although experts question the reliability of some research in these areas. Dr. Butterwick also said that, although power-assisted liposuction appears to reduce surgeons' physical burden in preliminary studies, long-term benefits for patients remain unknown.

When she first heard about low-level-laser therapy, she said, "my first thought was how is it possible that 635 nm can penetrate the skin into the fat?" However, research shows that 2.1 percent or less of this energy penetrates normal skin.

Armed with this knowledge, Dr. Butterwick and colleagues studied 10 patients at each of four different sites. Intraoperative laser treatment with an Erchonia (Erchonia Medical) semiconductor diode laser at 635 nm was performed on one cosmetic unit per patient, with the contralateral side acting as a control.

Additionally, five patients received two postoperative treatments to the side that was treated with the laser; five received no postoperative treatment.

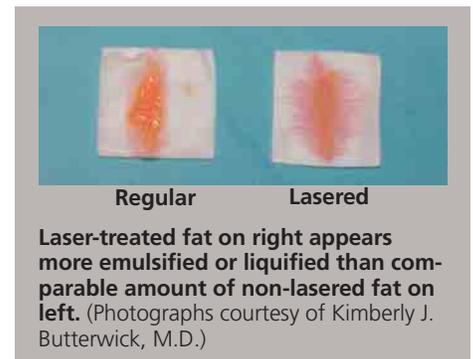
The researchers' technique involved applying tumescent-technique anesthesia

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Kimberly J. Butterwick, M.D.

with Klein's solution, then applying the laser to the necessary areas for 12 minutes. Liposuction was then applied to both sides, with any postoperative treatments being done in the first and second week for three minutes per session.

During treatment the laser is held four to



six inches away. "The patient can't detect you're using it," Dr. Butterwick said. "And it's hard to believe while you're using it that this can actually do something."

However, she said, "The most significant finding of the study was emulsification of extracted fat, and this was statistically significant."

The laser-treated fat furthermore had a brighter yellow appearance that was foamy and homogeneous, she said.

"When we rated ease of extraction, this initially was not statistically significant," Dr. Butterwick added. However, after one center's results were eliminated for failing to follow protocols properly, laser-treated fat provided a statistically significant advantage in this regard.

Additionally, some patients noted faster healing and quicker drainage with the laser treatments.

In the 10 patients she treated, Dr. Butterwick said, "I found that the bruising was about the same" between the laser-treated and control areas.

Nevertheless, she found that on the laser-assisted side, edema was better in four patients, while skin retraction and postoperative pain were each better in three patients. However, postoperative pain was worse in

COSMETIC DERMATOLOGY

two patients from this group, although no significant complications were reported.

“When I looked at my five patients who received postoperative therapy plus the intraoperative laser,” Dr. Butterwick added, “they fared better. Four of them had less edema and three had improved skin retraction and less postoperative pain. And none were worse if they received the three minutes of postoperative laser treatment two times.”

In patients she has treated since the study,

Dr. Butterwick continued, “you see faster vasoconstriction when the laser is applied. And 30 percent to 40 percent of the cases have been completed more quickly. This is probably because the cannula moves through the tissue more easily.”

For such reasons, Dr. Butterwick concluded that based on her experience at this point, the case for performing tumescent liposuction with assistance from low-level lasers “Seems much stronger than external

ultrasound. Since there’s no heat, it’s not as scary to use as internal ultrasound. So that puts it somewhere in between. It’s a very interesting technology” that warrants further study. In fact, she and her colleagues are planning additional research designed to help secure FDA approval for low-level lasers in tumescent liposuction. Dr. Butterwick possesses no financial interest in Erchonia Medical, which manufactures the Erchonia laser. **DT**

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