Patients Are Seeking Less-Invasive Fat Removal

BY DOUG BRUNK
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LAS VEGAS — Tumescent liposuction may be the current preferred method for removing unwanted fat, but laser lipolysis and other minimally invasive innovations may be the next frontier in body contouring.

"The toned body look is the new fashion statement and the reflection of youth," said Dr. Mark Nestor at the annual meeting of the International Society for Dermatologic Surgery. "Our patients are scared off by liposuction. They are looking for safe and effective minimally invasive treatments, not only for the face, but for removing unwanted fat."

What's more, he said, tumescent liposuction "is certainly technique dependent. Some people are wonderful at it; others are not as good."

One minimally invasive device for body contouring currently on the market is the Smartlipo (Cynosure Inc.), a 1064-nm and 1320-nm Nd:YAG laser, which requires a small incision to accommodate a 1- to 2-mm cannula and 300- or 600-mcm fiber that will heat and disrupt fat cells.

Cleared by the Food and Drug Administration in November 2006, the device is used in conjunction with tumescent solution and requires local anesthesia. Its photothermal and photomechanical effects cause coagulation of tissue, which results in skin tightening, said Dr. Nestor, a dermatologist who practices in Aventura, Fla. Hemostasis of blood vessels causes less bleeding and bruising, compared with traditional liposuction.

"You're heating the fat, but you're also dragging it behind the dermis," he explained. "Because of that, you're causing collagen remodeling and tightening."

Smartlipo's 1064-nm wavelengths are broadly absorbed by hemoglobin, and the energy delivered is distributed homogeneously into fat, "so it's very good at coagulation," he said. "You get enhanced hemostasis and you get healing."

The 1320-nm wavelengths are absorbed by water and the energy delivered is localized at the tip of the laser, "so you get a lot of fat disruption."

The combination of both wavelengths "tends to work the best," Dr. Nestor said, by allowing for safer, more even and efficient energy delivery. In his clinical experience, patients usually require a single treatment but may require a touch-up for optimal results.

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Another system he discussed is the LipoSonix (Medicis Inc.), which has not been cleared by the FDA but is available for use in Europe. This device uses a transducer to focus high-intensity ultrasound within adipose tissue at depths up to 13 mm without harming the skin or underlying tissues and organs.

The transducer is automatically scanned over a relatively large area of skin for ease of use and to ensure uniform energy deposition, "similar to the way a pattern generator works in a cosmetic laser system," Dr. Nestor said.

The transducer scans out a defined volume of tissue, creating what he called "a controlled injury zone." Chemotactic signals "then draw macrophages to the site of the injury, where they engulf lipid and cellular debris and carry it away through the lymphatics," Dr. Nestor said. This results in a reduction of the volume of the treated tissue.

The cellular debris eventually gets absorbed through the liver, and the process does not appear to cause spikes in triglycerides or cholesterol.

LipoSonix "is very precise and sophisticated, and it's easy to use," Dr. Nestor said. "This is a very exciting technology and becoming a prototype for high-energy cellulite removal using ultrasound."

Dr. Nestor disclosed that he has received equipment discounts from Cynosure, and has also received fees for speaking and consulting on behalf of the company. He also disclosed being a member of Medicis's scientific advisory board. He has also received fees for speaking engagements and research conducted on behalf of the company. ■