

Light on lasers

Thoughtful induction of heat into subcutaneous space, undersurface of skin induces better skin contraction

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Laser facelifts and laser-assisted incisional facelifts are popular among patients and surgeons alike, and they very well may represent the future of facelifts, according to American Academy of Cosmetic Surgery (AACS) immediate past-president Patrick McMenemy, M.D., who has performed many of these procedures over the past few years.



Dr. McMenemy

The popularity and less-invasive nature of these procedures are two certainties associated with laser facelifts; the rest, says the Sacramento, Calif., cosmetic surgeon, is up for debate as this work-in-progress proceeds along its scientific path.

TECHNIQUE Dr. McMenemy uses the Smartlipo MPX by Cynosure to perform laser facelifts. "In the area of the nasolabial fold, oral commissure and lower part of the lip, as well as

the jawl, we get much better results than we get with a standard facelift. In the neck, we can achieve results that can be as good as we get with a standard facelift," Dr. McMenemy says.

His technique involves removal of very small (if any) amounts of facial fat, followed by uniform application of energy (heat) between the skin and muscle via laser probe. It's this heating that smooths facial contours and tightens the skin, according to Dr. McMenemy. "During the past year, we have found that the way that we put the heat in and the way we heat the tissue is ultimately what provides the result," he explains.

"When we introduce heat via the laser, we theorize that we are essentially starting another cascade of healing that is slightly different from



Laser facelifts and laser-assisted incisional facelifts are becoming more popular, thanks to their noninvasive nature, but proper technique and more scientifically based evidence of these procedures' efficacy are critical to future success.

the mechanical trauma that we initiate when we do a standard facelift," Dr. McMenemy says. He evaluates outcomes thoughtfully and modifies his technique based on his observations.

"Earlier in the evolution of this technique, we were heating the skin to 40 degrees; now we heat the skin to 38 degrees. We were previously working right under the surface of the skin and now we are going about 3 mm or 4 mm deeper," Dr. McMenemy says. "Our results are pretty good, and in many cases we are getting excellent tissue tightening. I believe that if the induction of heat into the subcutaneous space and the undersurface of the skin are done intelligently and thoughtfully, it can help induce better skin contraction than we could potentially get with a traditional facelift. However, I can't say that's true in all patients all the time, because there is still a lot to learn."

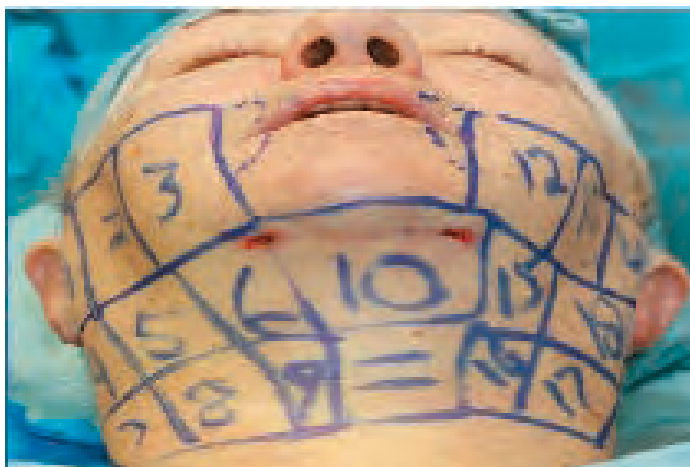
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Patrick McMenemy, M.D.
Sacramento, Calif.

MISCONCEPTIONS Aesthetic laser manufacturers suggest that each device's unique wavelength is responsible for the effects they achieve, and surgeons tend to debate the ideal amount of energy with respect to optimal outcomes. Dr. McMenemy suspects that neither of these parameters represents the defining factor, suggesting that the combination of heat-induced trauma and surgeon experience is more likely the driving force behind the procedure's efficacy.

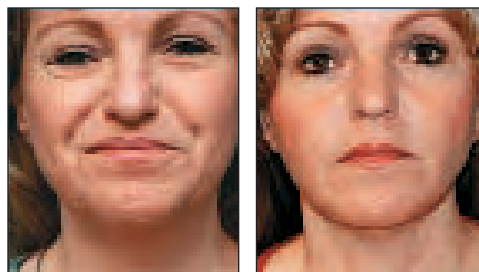
"I believe the tissue tightening that we achieve is a physiologic event that results from the presentation of heat in the tissues, and I think that trauma and the uniform delivery of that trauma ends up creating some tissue tightening, especially of the skin, but potentially also of the deeper tissue," he explains.

The question isn't how much heat to apply, but how to apply the heat, Dr. McMenemy says. First, he says, surgeons should use tumescent anesthesia. "Using tumescent anesthesia is a very important part of creating a uniform



The grid that Dr. McMenemy draws to ensure that each area of the face and neck is properly heated to 38-40 degrees Celsius.

(Photo credit: Patrick McMenemy, M.D.)



A female patient preop (left) and 4.5 months post-procedure.

(Photo credit: Patrick McMenemy, M.D.)

environment in which to induce trauma," he explains.

Second, practitioners should use their own unique techniques for fat removal. "We use a Blugerman rasp and a 4 mm spatula to create tunnels under the skin throughout the entire lower two-thirds of the face and almost the entire neck," Dr. McMenemy explains. "We do that because we want the heat that we deliver through the laser cannula to hit all of the spaces and heat each quadrant as uniformly as possible."

Dr. McMenemy follows grid markings on the patient's face and neck to ensure he has applied a uniform level of heat or trauma to each portion of the grid. "We don't worry about the exact number of joules that we've put in; what we care about is what the tissue 'sees,' as evidenced by its temperature at the surface. The way that we can tell what the tissue absorbs is that it registers a temperature elevation," he says.

In short, he recommends always erring on the side of being conservative and safe. "Some of these lasers achieve extremely high energy levels, making them potential weapons under the skin," Dr. McMenemy says. "Surgeons need to be careful to not destroy the subdermal

vascular plexus and avoid disrupting the skin blood supply," he stresses.

STANDARDIZING THE PROCESS Dr. McMenemy says now that his AACS presidency has come to a close, he will have a substantial amount of extra time to devote to working with fellow surgeons who are interested in standardizing the parameters of laser facelifts. "Ideally, a large group of surgeons who are experienced in facial work will use the lasers, learn what my colleagues and I have already learned, and we can work together to identify what works best to benefit our patients," he says. "I don't have the answers. This procedure is still evolving."

Dr. McMenemy suspects his positive outcomes are not a result of a hemostatic mechanism. "In the hands of experienced facial plastic surgeons and cosmetic surgeons who do facial work, bleeding on a face where tumescent anesthesia has been used is not an issue. Any experienced cosmetic facial surgeon will tell you that they don't need a better way to raise a tissue plane with no bleeding," Dr. McMenemy says. "They'll say, 'I don't have any bleeding that I'm concerned about, and I can raise my entire facial flap in less than 10 minutes every time.'"

So, a potentially dryer surgical field is not as much of an enticement as suggested by laser marketers, he says. "A dryer surgical field is not a reason to use a laser for facelifts. What the laser does, however, is it gives us a unique type of skin contraction that we do not see with just an elevation and a redraping in a traditional way."

Dr. McMenemy says the bells and whistles of the laser du jour are no match for education and experience. "Surgeons who are interested in offering this procedure need to learn from someone who can pass on their knowledge. These lasers can be quite powerful, and our first order of business is 'do no harm,'" he stresses. ◀




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