“Tightening the Envelope”: Ultrasound-based Tightening and Lifting

The Ulthera system is the only FDA-approved lifting procedure, suitable for targeting sagging skin of the face and neck.

BY MARGUERITE GERMAIN, MD

Ultrasound has been used for more than 60 years as an imaging modality safe enough for use on pregnant women to visualize the fetus without any risk to the baby. Ultrasound technology is now being harnessed for rejuvenation. Ultherapy, using the Ulthera System (Ulthera, Inc.) is the first and only FDA-cleared lifting procedure. It is ideally suited for the common patient complaint of facial sagging and shows the potential for multiple applications in the dermatology clinic.

**ULTHERA OVERVIEW**

Ultrasound therapy for cosmetic rejuvenation is a novel, non-invasive approach to lifting and tightening the skin of the face and neck. With Ultherapy, ultrasound is used for visualization and treatment so that energy can be delivered to the precise level intended. Once the handpiece is applied to the skin, the clinician can visualize 8mm to the subcutaneous tissues. Energy is delivered at two different levels with two separate passes. The first pass delivers energy deep in the skin to the layer of the superficial musculoaponeurotic system (SMAS). This pass results in the lifting effect. The second pass is much more superficial and results in the firming and toning of the skin. Evidence shows the energy delivered by Ultherapy results in thermal injury zones or tissue coagulation points that lead to immediate tissue contraction and initiate neocollagenesis and elastic fiber regeneration. Full-face treatment delivers 600-1,000 lines of energy, resulting in approximately 10,000 discreet coagulation points placed at dual depths. Recently, there is a new transducer available that enables even more precise treatment superficially in order to improve treatment of fine wrinkles around the mouth and eyes.

Unlike most other devices, Ultherapy delivers energy deeply with no effect on superficial layers of the skin. This ability to spare the epidermis sets Ultherapy apart from devices that add bulk heating to the skin externally. In essence, Ultherapy works from the inside out rather than the outside in—the first device able to do this. Even though Ultherapy is not a resurfacing procedure, treatment will have some effect on texture and pore size. Reduction in pore size likely is a secondary result of the lifting provided by collagenesis; with more support, the skin structures have more support and thus are less likely to “fall open.”

Most dermatologists—even those who don’t provide many or any cosmetic services—are used to patients inquiring whether anything can be done to treat sagging, drooping skin. The questions frequently are accompanied by the patient using his/her fingers to push up their skin around the temples or under their jaw-line, saying, “This is what I want to achieve.” Within limits, it is precisely these types of concerns that Ultherapy can address. It is used to provide a tightening and lifting effect of the face and neck, with a specific indication for browlift. There are also studies underway looking at other areas to tighten and lift such as the décolletage, knees, elbows, buttocks, and breasts.

There is interest in investigating the use of ultrasound to treat acne and rosacea. For acne, there is some evidence that dermal heating may reduce bacterial loads and could affect the sebaceous glands. In rosacea, it is thought that the improved structural basis of new collagen and elastin will support vessels and improve microcirculation, thus reducing inflammation and vascular pooling. Treatment effects on sebaceous glands may also be relevant to the management of rosacea.

**PATIENT SELECTION AND ADMINISTRATION**

Ultherapy is appropriate for a wide range of patients, primarily those in their late 30s through early 70s, with mild to moderate wrinkling and sagging. As patients near the upper age range or...
Patients are shown before (left) and after (right) a single Ultherapy session.

be quite painful. I explain to patients that this is definitely a “no pain, no gain” procedure. However, I assure them that while the treatment will be painful, I am able to minimize their pain. Oral pain medication and/or local blocks dull any pain and render treatment tolerable, although there may nonetheless be minor discomfort. Many patients opt for no pain management, and they do very well.

Patients explain that the discomfort they feel during the procedure is a tingling sensation like “pins and needles.” Brief episodes of intense tingling are possible, most often when treatment is applied over bony prominences, such as the forehead, supraocular region, or mandible. The pain is only felt during the procedure. Only very rarely does the tingling persist for some time after treatment, but in my experience it is always transient.

Patients who opt for oral medication will not be able to return to most activities that day, so the treatment becomes a one-day-downtime procedure. For patients who forgo oral medication, Ultherapy is a no-downtime procedure.

I have found that distraction or “Talkesthesia” is one of the most effective pain control methods for any procedure, and is important for this procedure. Besides taking the patient’s mind off of any possible discomfort, talking provides an opportunity for you to build a stronger rapport with the patient. Patients who become partners in their care are more likely to be satisfied with treatment and remain with the practice—a win all around. As we talk during the procedure, I try to re-enforce to the patients that combining Ultherapy with other aesthetic procedures like fillers and neuromodulators will certainly significantly improve their results overall.

Half way through the procedure, I stop to allow patients to visualize progress to that point: “half time analysis.” At this time, the results patients will see are about 10-20 percent of the total improvement they will eventually see. Patients should anticipate seeing full results in three to six months. Ultherapy indicates that it takes three months to achieve full response, but in my experience, this is variable based on patient characteristics, and some individuals will continue to improve past this point.

My patients have been very happy with their results. I make it very clear to them that Ultherapy is not going to give them the dramatic effects of a facelift. They say things like, “My face skin fits better on my face,” or “The envelope feels tighter.” Of course, I take very precise before photos to show them their results, but even the patients with minimal photographic results feel that their face is tighter and their skin is improved. They feel that there are visible and invisible results in their skin, which improves their global aesthetic.

Ultherapy is currently a one-time procedure in the US, although our European colleagues are reporting continued response with multiple treatments provided over time. We may begin offering subsequent treatments in the US with potential to provide more substantial improvement.

**CURRENT BENEFITS AND FUTURE DIRECTIONS**

Ulthera is a multi-purpose system for which clinicians may only be beginning to uncover clinical uses. As the only device FDA-cleared procedure to provide a lifting effect, it fills a niche in the cosmetic dermatology practice where patients seek not only tightening and volumizing but also a meaningful reduction of sagging, wrinkled skin. This is a common cosmetic complaint among both men and women, and the ability to provide non-surgical treatment with little to no downtime during a 90-minute office visit is a key development.

Available on the market for several years now, Ulthera has seen some modifications to the original protocol, leading to enhanced results. I did not purchase the system when it first came on the market and was on board once the new protocols were in place. I am confident that the current therapeutic approaches are on-target, and I and my patients are pleased with results using the current approach.

The system is relatively costly, but a careful ROI analysis can help a practice determine whether it is right for their practice. In my practice, the system became profitable after just three months. The treatment is popular due to widespread media coverage, including talk shows and health programs. I have capitalized on in-office marketing opportunities and have also seen a good deal of word-of-mouth referrals from satisfied patients.

Dr. Germain has no relevant disclosures.

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