

# Radiofrequency is another option for blepharoplasty

High-frequency, low temperature radiofrequency provides better clinical results than previous surgical methods, according to one surgeon.

by Chedly Bouzouaya, MD

Special to OCULAR SURGERY NEWS

Peer-reviewed literature indicates that radiofrequency is more cost-effective and versatile than laser surgery for blepharoplasty and produces fewer side effects and safety issues.

I subscribe to this belief now, on the heels of heavy marketing in the 1990s surrounding the CO<sup>2</sup> laser and its popularity for blepharoplasty and resurfacing.

For upper lid blepharoplasty, I use the advanced composition alloy wire varitip electrode to cut through the skin on a cutting current mode. I use this at the lowest possible power without producing any tissue drag.

Then I change to a thicker electrode – the empire advanced compo-

## Advantages of radiofrequency

I have discovered the advantages of radiofrequency through my use of the high-frequency low temperature (HFLT) Surgitron Dual Frequency unit from Ellman International.

The HFLT unit is 10 to 40 times more cost-effective than laser and does not require any maintenance fee. The unit also requires less space in the operating room than laser equipment and is easier to learn and master, in my experience.

I have found that the learning curve with laser is steep, and laser technology and laser machines keep changing.

When using laser, nonreflective corneal shields and protective glasses are required for the surgeon and the operating room staff, and only nonre-

And finally, in my experience with the radiofrequency unit, there is less lateral heat spread than with laser, and it therefore is safer and less painful. The lateral tissue damage has been further reduced by the newly developed electrodes from the manufacturer.

## CO<sup>2</sup> laser and HFLT unit

The CO<sup>2</sup> laser became popular in the 1990s for blepharoplasty and resurfacing. The advantages over the use of the traditional scalpel, which was then the routine surgical tool, were that the CO<sup>2</sup> laser had a simultaneous cut and coagulation modality, therefore reducing the surgical time and allowing the surgeon to work in a bloodless field.

Of course, hemostasis is essential for safety and efficiency. The scalpel does not provide any hemostasis and is therefore a poor choice for cutting vascular tissue.

The CO<sup>2</sup> laser is a noncontact laser that relies on laser energy transmission

Intracellular pressure increases as water molecules expand. Volatilization results in cellular conversion to vapor. The process emits low-temperature steam, which aids in coagulation. Cell-specific interaction enables meticulous dissection with tissue preservation.

The HFLT surgical device allows precision, adaptability, flexibility, tactile feedback, safety and artistry. It also provides for an incision without pressure, a bloodless field, a good appreciation of anatomy, a short surgical time, a sterile incision, less damage to healthy tissue, fast healing, less pain and good scarring. I have found that the quality of hemostasis and postoperative pain is similar to results with the CO<sup>2</sup> laser.

## Choice of electrode

When using the HFLT unit, the choice of the electrode is important. New advanced composition alloy electrodes, which are patent pending, have the potential to provide higher conductivity, lower temperature and less thermal damage compared with classic alloy electrodes.

The surgeon needs to bear in mind that the thinner the electrode, the less lateral heat damage is induced. However, the downside of a thinner tip is that it provides less hemostasis than a wider one.

## For more information:

Chedly Bouzouaya, MD, can be reached at 83 Avenue Mohamed V, 1002 Tunis-Belvédère, Tunis; e-mail: chedly@bouzouaya.com. Dr. Bouzouaya has no direct financial interest in the products discussed in this article, nor is he a paid consultant for any companies mentioned.

■ Ellman International, maker of the Surgitron Dual Frequency unit, can be reached at 3333 Royal Ave., Oceanside, NY 11572; Web site: www.ellman.com.

## References:

- Acland KM, Calonje E, et al. A clinical and histologic comparison of electrosurgical and carbon dioxide laser peels. *J Am Acad Dermatol*. 2001;44(3):492-496.
- Bouzouaya C. Mini-incision lower lid blepharoplasty reduces postoperative complications. *Ocular Surgery News*. Sept. 1, 2001:71.
- Bouzouaya C. Radiosurgery, an effective and efficient technique for cosmetic eyelid surgery. *Ocular Surgery News*. Feb. 1, 1999:37.
- Bouzouaya C, Byron H. La técnica de resurado de las lesiones faciales benignas puede ser segura y efectiva. *Ocular Surgery News Latin America Edition*. May-June 2000:36.
- Harris D, Noodelman R. Using a low current radio-surgical unit to obliterate facial telangiectasias. *J Dermatol Surg Oncol*. 1991;17(4):382-384.
- Hurwitz JJ, Johnson D, Howarth D, Molgat YM. High-frequency radio wave electrosection of full-thickness eyelid tissues. *Can J Ophthalmol*. 1993;28(1):28-31.
- Turner RJ, Cohen RA, et al. Analysis of tissue margins of cone biopsy specimens obtained with "cold knife," CO<sub>2</sub> and Nd:YAG lasers and a radiofrequency surgical unit. *J Reprod Med*. 1992;37(7):607-610.
- Welch DB, Bryar P. Radiosurgery causes less heat damage than laser in blepharoplasty. *Ocular Surgery News*. Sept. 1, 2001:76.



Wound dehiscence after suture removal (CO<sup>2</sup> laser blepharoplasty). Images: Bouzouaya C



Wound dehiscence after suture removal (CO<sup>2</sup> laser blepharoplasty).



Laser blepharoplasty visible scar.



Scar quality, CO<sup>2</sup> laser right eye, radiofrequency left eye.



Before (left) and after blepharoplasty.



sition alloy electrodes needle – and switch the current to cutting coagulation to remove the excess skin. By doing so, I reduce the lateral heat damage and allow for a faster healing process.

Clinically, I noticed that when removing the suture at 5 days, I had wound dehiscence or a wider scar when using CO<sup>2</sup> laser. This is due to the thermal damage zone or lateral heat spread, which the literature has shown is more extensive with CO<sup>2</sup> laser.

reflective tools can be used. When using HFLT, there is no need for any of these safety measures.

Because the HFLT unit is portable, it can be moved to various surgical sites. It uses a fine handpiece with tactile tissue feedback. With laser, the handpiece is bulky and there is no tissue feel, as laser is used above the surgical site.

HFLT offers a large selection of electrodes adapted to different surgical areas; it is a procedure-specific selection.

through air to a direct spot.

Other surgical tools have been used, including heated scalpels, harmonic scalpels and other lasers, such as the argon and the contact tip YAG laser.

HFLT is a patented radiowave source amplified to 4 MHz, further modified by smoothing and shaping of waveforms-clean energy.

High-frequency radiowaves energy has a strong affinity for water. The targeted tissue or cell readily absorbs energy due to its high water content.