

# Utilizing specially designed microdissection needles and lower thermal spread to improve aesthetic quality in upper lid blepharoplasty.

## Introduction & Background

Patients undergoing upper eyelid blepharoplasty surgery desire long-lasting aesthetic and visual results with minimal pain, swelling, and bruising. The use of specialized microdissection needles and generators with lower V-peak assists with the technical aspects of performing this surgery and can lead to improved aesthetic and therapeutic results. Nicholas T. Monsul M.D., FACS, a Board-Certified Ophthalmologist and Oculofacial Plastics surgeon, uses the Bovie® microdissection needles to perform upper lid blepharoplasty, with excellent aesthetic results.

The two methods of performing upper lid blepharoplasty include the traditional approach, utilizing a knife blade or incisions, and an electrosurgical approach, in which a microdissection needle is used for incisions. Performing an upper lid blepharoplasty can be complicated by bleeding that obscures the relevant anatomy. Additionally, the upper eyelid tissue is more challenging to cut with a scalpel after injection with a local anesthetic injection into the upper lid. Utilizing a Bovie® microdissection needle with the Bovie® Surgicenter Pro Generator significantly lowers the probability of these complications and challenges and is an optimal solution for performing blepharoplasty with the electrosurgical approach. Furthermore, using electrosurgery reduces the surgical time for the procedure, decreases scar tissue, and can offer a higher quality aesthetic result because of the precision of the incision in the margin crease line.

## Case Presentation

Dr. Monsul performs blepharoplasty in both the office and ambulatory surgery settings and has over 15 years of experience using a variety of electrosurgical units (ESU).

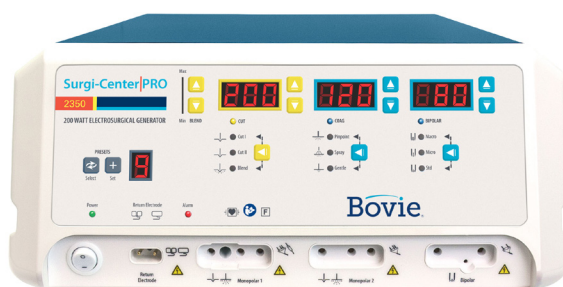
Between May and December of 2019, he utilized the electrosurgical approach with the Bovie® microdissection needle, a 2-inch ultra-sharp tungsten wire needle electrode on multiple upper lid blepharoplasty patients. The Tungsten metal provides advanced heat resistance over traditional stainless steel, and the ultra-sharp tip offers precision and performance, even in low wattage settings.



Bovie® MicroDissection Needle Electrode

In conjunction with the Bovie® microdissection needle he utilized the Bovie® Surgicenter Pro generator, one of the most efficient generators on the market, which produces lower peak voltage (V-Peak) and less thermal spread when compared to other electrosurgical units (ESUs).

Thermal spread is the dissemination of heat to neighboring tissues from the tissue to which it is applied, and is a variable that may complicate electrosurgery. In the case study, the initial settings on the Bovie® generator were set at 10-15 W Cut and 10 -15 W Coag and for most procedures, blended mode.



Bovie® OR|PRO 300  
Electrosurgical Generator

## Summary

The blepharoplasty procedures utilizing the Bovie® microdissection needle, and the Bovie® Surgicenter Pro generator at lower power settings provided favorable aesthetic and therapeutic results both immediately and at six weeks post-op.



Before



Post-Op

Several methods can be utilized to perform blepharoplasty or eyelid surgery<sup>1,2,3</sup>. The electrosurgical approach with the Bovie® Surgicenter Pro generator and an ultra-sharp Bovie® microdissection needle provides optimal outcomes, with more focused thermal delivery. In addition, this method offers maximum precision for the initial incision, minimized surgery time, less bleeding risk, and reduced collateral tissue injury than other devices due to more focused thermal delivery. The use of more focused thermal delivery is surgically advantageous as thermal spread can have severe consequences and complicate the electrosurgical approach. If thermal spread occurs during blepharoplasty, heat can transfer to the optic nerve and result in “worst-case scenarios” such as twitching eye, non-cosmetic visible defects of the eye, vision changes, and adverse effects to the neurovascular bundle. The areas around the eyes contain a multitude of nerve bundles such as the supraorbital and optic nerves, which can be severely affected by thermal spread.

Since the Bovie® microdissection needle, and the Bovie® Surgicenter Pro generator produces lower V-peak, and less thermal spread this combination is the preferred methodology for performing upper eyelid blepharoplasty. Dr. Monsul cites better surgical outcomes and less risk when using this combination.

While other electrocautery systems and needles, such as the Stryker Colorado Microdissection Needle, can be used for blepharoplasty, the Bovie® Microdissection needle paired with the Bovie® SurgiPro Generator has the significant advantage of decreased thermal spread and should be considered first when planning any electrocautery-assisted blepharoplasty.

## References

1. Colton JJ, Beekhuis GF. **Use of electrosurgery in blepharoplasty.** Arch Otolaryngol. 1985 Jul; 111(7):441-2.
2. Rokhsar CK et al. **The short pulse carbon dioxide laser versus the colorado needle tip with electrocautery for upper and lower eyelid blepharoplasty.** Lasers Surg Med. 2008 Feb; 40(2):159-64. doi: 10.1002/lsm.20604
3. Arat Yo et al. **Comparison of Colorado Microdissection Needle Versus Scalpel Incision for Aesthetic Upper and Lower Eyelid Blepharoplasty.** Ophthalmic Plast Reconstr Surg. 2017