Pre-Surgical Review for New ECP Surgeons

If you are about to perform your first ECP surgery we assume you have already learned much about initial patient selection, instrument settings and controls, and surgical approaches and techniques. If you are not informed in any of these areas please take advantage of the many resources we can provide to help you prepare for your first ECP's. Most agree that ECP is not particularly difficult to learn but some fundamental techniques are required to assure ease and success on your first ECP cases.

The objective here is to review several important components of ECP surgery in order to help you become comfortable and proficient as quickly as possible.

Instrument Settings:

Laser Power- 200 mw (.2 on the display). Rarely used below .15 or above .50.
Most popular setting is .25 watts. There may be some variation depending on pigmentation.
Laser Duration- Always on **CON**tinuous.
Aiming Beam- Usually on 10-20 setting.
White Light Illumination- Not too bright. Too much illumination will "wash out" the aiming beam.

- **Take Your Time:** You will learn to do this in 3-4 minutes but speed comes with experience with the new view and a "feel" for titration of the laser energy delivery. Taking your time on the first few cases will dramatically shorten your proficiency learning curve.

- **Make adequate and well-placed incisions:** The endoscope is 19 or 20 gauge. Any primary cataract incision allows easy access. Enlarge your second incision to at least 2 mm. A more generous incision allows easier entry and better self-sealing structure after the endoscope is introduced and manipulated. For cataract/ECP surgeries, if your 2nd incision is close to 90° from your primary you will easily access 270° with the endoscope. For stand alone ECPs choose the 2nd and perhaps 3rd incision site after you've seen and treated what you can through the first. (Synechiae may make some areas difficult to approach and treat.)

- **Create a good space between the iris and the anterior lens capsule:** This is the number one problem area for new surgeons. Working in a tight space can lead to post op inflammation when the underside of the iris is rubbed by the endoscope or inadvertently lasered. Also, with inadequate separation the processes are difficult to see and approach leading to inadequate treatment. How to get a good space! Remove all viscoelastic from the anterior and posterior chambers (including the bag) before injecting it into the sulcus. If viscoelastic is in these spaces it acts as a counterforce to proper separation of the iris and anterior capsule. Make sure the cannula is well under the iris before injecting and witness the iris bombay. If the space is tight when you go in with the endoscope, remove and re-inject more visco. (Note: Extra care should be taken with this step for pseudophakes with capsulotomy and pseudoexfoliation patients.)

- **Learn the techniques necessary to manipulate endoscope efficiently while looking at the monitor:** Early ECP surgeons sometimes torque the wound because their hands drift when they're looking at the monitor. A few suggestions: Plan on a relatively shallow angle of approach, basically on plane with the iris (much more so than a phaco tip). Trying a hand position over the endoscope is helpful to many. Use a finger from your other hand to steady and anchor the endoscope near the incision. With a little experience this eliminates any drift at the incision site. In all cases the curved endoscope can be very helpful when high brows or noses make a shallow approach difficult.

- **Learn to titrate your energy delivery to have a slow and thorough effect on the entire horizontal strip of the visible ciliary body tissue:** A quick surface burn of the face of each process is not an adequate treatment. A slow and complete whitening of the entire horizontal strip of the visible ciliary body is the objective. The primary technique used to control the laser power is adjusting the distance of the endoscope from the target tissue. The ideal distance for treatment puts 4-6 of processes in your field of view. Close proximity will increase the heat and speed of the tissue reaction. The areas between the processes are usually folds or valleys of target tissue at a greater distance from the endoscope. The extra distance is the reason they aren't affected as quickly by the laser. In these areas move in or stay on the power longer. If the valleys are untreated the overall effect is diminished.

- **Never apply laser power if you can't see your aiming beam:** It is possible to cover the laser fiber with a fold or the lead edge of the iris while you still can see the processes. The aiming beam will not be visible. The iris can be nicked or blanched if the laser is fired. This results from working without good viscodisection or holding the endoscope at too steep an angle. Also, do not treat on or through haptics. This scatters laser energy around the area and can lead to inflammation.

- **Post-Op Therapy:** Most surgeons agree that post ECP inflammation is not much different than with cataract only patients when post op treatment includes topical steroids, non steroidal anti inflammatory agents and antibiotics. Many surgeons increase the frequency or duration of medications for ECP patients to avoid virtually all problems. (Difficult access for treatment or poor technique can increase the possibility for inflammation.) It has been suggested that any excessive inflammation can be treated with intraocular Decadron.

- **Summarizing Tips to Avoid Inflammation:** Inflate the sulcus well to create adequate space for treating and avoid touching any tissue; avoid "popping" the ciliary processes; make sure aiming beam is clear and laser energy is targeted; remove all viscoelastic; treat with intraocular steroids as needed.

- A Glaucoma Specialist/ECP surgeon told his associates recently ***"It is easy to make this fail. Just don't treat enough."*** It is natural for new surgeons to treat conservatively but the vast majority of experienced and notable ECP surgeons believe 270° to 360° of treatment is both safe and desirable. Tens of thousands of ECPs have resulted in no reported cases hypotony or phthisis on a POAG eyes. There are exceptions you should be aware of but, in general, we encourage you to learn from the experiences of others and plan to treat 270+ for most patients.

Practice Before Your First ECP

Simply have the instrument set-up during a regular cataract case. After everything else is done inject some viscoelastic under the iris as described above. Orient the endoscope, insert it to the middle of the pupil, and observe the sulcus. Your haptic placement, any retained material under the iris, and the ciliary processes will be seen. This will help you get over the natural concerns of looking away from the microscope and guiding the image endoscopically.

If you have questions about these points or any other aspect of your first ECP cases please contact your Endo Optiks Specialist or visit our web site at www.endooptiks.com.