

Bladeless Laser Cataract Surgery – A Revolutionary Breakthrough or Just another Overhyped Gimmick in Ophthalmology?

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Femtosecond Laser-Assisted Cataract Surgery (FLACS), has received a great deal of attention during the past few years since its introduction and approval by the FDA in 2010 [1].

After performing my first case in November of 2012, and now after three years of experience and over 1000 cases, I believe it's time to present some of the pros and cons of this revolutionary new technology.

While I've not used every laser available, I have had experience with both the VICTUS (Bausch & Lomb) and the LenSx (Alcon). (The third FDA-approved laser being the Optimedica/AMO LensAR). All femtosecond lasers function very well and provide an incredibly high margin of safety and performance with extremely rare if any complications.

PROS

Some unanticipated benefits of using the Femtosecond laser in cataract surgery in addition to the increased accuracy of the capsulotomy opening and dividing the lens nucleus, have been the use of FLACS in the treatment of the very mature, rock hard nucleus and by exercising great caution, paying close attention to posterior depth, the white, mature and hyper mature cataract [2].

Centration of the capsulorhexis has been taken to a new level with the accuracy of FLACS in this step of our cataract procedure [3]. This is particularly helpful in placement of the premium IOLs, which depend on accurate and precise centration to maximize their effect and minimize haloes and crescents around lights at night.

Studies have also shown an early decrease in endothelial cell loss by using the femtosecond laser in creating the capsulotomy and in breaking up the lens prior to phacoemulsification with ultrasound [4].

Correction of astigmatism at the time of cataract surgery. All of the femtosecond cataract machines offer Limbal Relaxing Incisions (LRIs) as part of the treatment algorithms, which is convenient for the patient in not often requiring an additional procedure.

One needs only to experience offering a patient "Bladeless Laser Cataract Surgery" and seeing their response to the choice of "LASER" v traditional "Old Fashioned" Phaco, to catch a glimpse of how popular this technology is going to become with our patients.

CONS

Cost to both the patient (we charge an extra \$1900 for FLACS which is not covered by insurance) and the cost of the machine (\$300,000 to \$400,000) to the ophthalmologist (not including the dedicated space or ventilation revisions to an operating suite). For what benefit? Some early studies showed no statistically significant difference in outcomes between FLACS and traditional cataract surgery [5,6].

Raising patient expectations to unreasonable levels. It seems no matter what a patient is told pre-operatively, if they pay thousands of dollars extra per eye for FLACS, they expect perfection. We have found patients with 0.50 D of astigmatism or ametropia insisting on either exchanging the IOL or enhancing the outcome with a laser refractive procedure, claiming they "paid for perfection."

Additional time in the operating theatre. Initially, we found a 25% reduction in the number of cataract cases we could perform in an operating day. With time and a team approach, we now find 3-4 minutes of additional time is necessary for each FLACS operation.

Some tight eyelid fissures make it extremely difficult to place the patient interface, requiring two bent paperclips or Desmarres retractors to allow successful docking.

More enhancements. As mentioned previously, with patient expectations so elevated with FLACS, we were required to add a 5% enhancement rate surcharge to our pricing structure to cover the cost of patients who require and insist upon a LASEK “touch up” following an unsatisfactory outcome. This cost is factored into our “global out of pocket fee” for FLACS.

In summary, Femtosecond Laser Assisted Cataract Surgery (FLACS) is here to stay. Regardless of what the naysayers have opined about being no different in outcome, time will ultimately answer whether the outcomes of FLACS will live up to the hype surrounding its early results. In my 3 year experience, FLACS has been not only a Godsend for those tough cases such as dense mature or hypermature cataracts, patients with compromised corneas or desiring accurate multifocality, but has also brought back a large measure of the joy others have described in going about striving for perfection in the most common operation performed around the world.

It has even helped my manual “old fashioned” phaco cases by comparing my manual technique to a perfect capsulotomy. I will continue to give it two thumbs up.

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