

## Surgery 2017: Pearls from 1000 robotic femtosecond bladeless laser-assisted cataract procedures- John S Jarstad, University of Missouri

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Robotic Femtosecond Bladeless Laser Cataract Surgery is the newest and most controversial procedure in the world's most common surgical procedure cataract surgery with intraocular lens implantation. First performed in England in 1949 by Sir Harold Ridley, the technology for both removing the cataractous lens and implanting a corrective intraocular replacement lens has reached new heights of precision and success with the introduction of the femtosecond laser, approved by the FDA for use in patients (2011). The purpose of this study is to describe the experience of one surgeon who has performed over 1000 robotic femtosecond bladeless laser-assisted cataract procedures and review common pearls that have led to excellent outcomes. Methodology & Theoretical Orientation: 1000 patient procedures were reviewed to determine common complications and findings that would improve outcomes compared to early Femtosecond Laser-assisted Cataract Surgeries (FLACS). Findings: Common complications included: difficulty docking the laser on Asian patients and those with small eyelid fissures, incomplete anterior capsulotomy with early interface attachments, posterior capsule blow-out, decentered Lens capsulotomy and small pupil and Floppy Iris Syndrome. Conclusion & Significance: Whilst some conservative ophthalmologists have criticized Femtosecond Laser-assisted Cataract Surgery (FLACS) as an overhyped gimmick, its usefulness in patients with dense, mature and hyper-mature (Morgagnian) cataracts and in assuring the accurate centration of newer multi-focal intraocular lens implants is unquestioned in the authors opinion. Robotic Femtosecond Bladeless Laser-assisted Cataract Surgery is here to stay and will be the future of the most common surgical procedure performed throughout the world.

### Introduction:

Femtosecond laser-helped waterfall medical procedure (FLACS) speaks to a potential change in perspective in waterfall medical procedure, however has likewise produced impressive debate. Backers of the innovation recommend that the utilization of femtosecond laser accuracy will convey prevalent results, an improved security profile for patients and make ready for additional advances in the field. On the other hand, depreciators point to the enormous monetary costs included and guarantee that comparable outcomes are feasible with ordinary little entry point phacoemulsification.

### Materials and Techniques:

A writing search was embraced on Pubmed utilizing the accompanying analytical terms: 'femtosecond', 'phacoemulsification', 'waterfall', 'ultrafast', 'laser', and mixes

thereof. Query items were screened for importance, and just English language papers distributed up to October 2012 were incorporated. References referred to by these papers were likewise recovered and broke down. What's more, articles and logical papers from the writers' very own libraries were assessed.

This audit gives an exhaustive and impartial record of the advancement of FLACS since its origin, surveying, and assessing the present proof.

### Recorded Viewpoint—The Development of Waterfall Medical Procedure:

The principal references to waterfall medical procedure were made by the researcher Aulus Celcius in 29 AD. Around 200 AD, the Indian doctor Sushruta portrayed the surgery of framing, representing an activity whereby the eye was punctured utilizing a 'grain molded tipped bar like instrument held with the center, record, and thumb fingers.' In the eighteenth century, waterfall medical procedure arrived at Europe, yet it was not until the 1948, through Harold Ridley and the idea of intraocular focal point implantation allowing fast visual restoration, those goliath walks in careful strategy were made. In 1967, when Charles Kelman presented phacoemulsification, the requirement for a long postoperative remain in emergency clinic decreased, yet this was not received generally in the United Kingdom until the 1990s.

Since its origin, phacoemulsification medical procedure has quickened through improved instruments, focal point innovation, fluidics, and vitality conveyance. All things considered, the essential arrangement of steps included have remained to a great extent unaltered in the course of recent years.

Today, waterfall medical procedure is the most regularly performed surgery on the planet, with an expected 19 million activities performed annually.<sup>1</sup> In the United Kingdom alone, it is evaluated that 300 000 tasks are performed every year by the National Health Service (NHS).

### Lasers in waterfall medical procedure:

During the 1970s, lasers started to be researched and created for a wide range of utilizations inside the field of waterfall medical procedure. The most broadly received is the neodymium-doped yttrium-aluminum-garnet (Nd:YAG) laser for back capsulotomy in pseudophakic patients with back capsular opacification, a method previously portrayed in 1980. Lasers

have additionally been utilized for phacopuncture,4 front capsulotomy before waterfall extraction5 and photolysis of the cataractous focal point. Be that as it may, attributable to either unwanted confusions or essentially an inclination for other non-laser-based procedures, these applications are not in like manner utilization.

#### **Preparing Suggestions and the Expectation to Absorb Information:**

FLACS will unquestionably require a time of preparing under management, similarly likewise with phacoemulsification. Specialists should figure out how to dock the eye to the laser, just as see how to decipher the anatomical pictures, modify the laser parameters and convey vitality securely. As showed by Bali et al and just like the case with phacoemulsification, the FLACS strategy will include a huge expectation to absorb information in any event, for experienced waterfall specialists. Each machine is probably going to have explicit modifications that will require a time of learning by the going to specialist. Moreover, with preparing programs all through the world receiving a more competency-based structure, measures across various stages would need to be thought of and embraced by administrative preparing sheets.

A nonattendance of randomisation and blinding has influenced most investigations performed to date. In spite of the fact that this acquaints a danger of inclination with the outcomes, this is relieved by the way that most creators have arrived at comparative resolutions. It ought to likewise be noticed that these early examinations, by definition, are influenced by the marvel of the expectation to absorb information. Better outcomes are probably going to be accounted for as specialists rise the bend and refine the strategy.

#### **Conclusion:**