

Astigmatically Neutral and Stronger Incisions with Micro Incision Cataract Surgery with Micro Incision Lens (MIL)

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Abstract

A study demonstrating that induced astigmatism was significantly less after coaxial microphacoemulsification surgery through a temporally-oriented, clear cornea 2.2 mm incision compared with conventional coaxial phacoemulsification through a 3.0 mm incision. The result showed a significantly marked difference in the amount of astigmatism induced. Concluding to show that the MICS with MIL is essentially giving astigmatically neutral incision.

Introduction

Surgeons performing “Ultrasound Incision” coaxial phacoemulsification and IOL implantation seem to be unanimously enthusiastic about their experiences thanks to the introduction of smaller diameter sleeves. The new approach is associated with the same stable anterior chambers, efficient phacoemulsification, and easy aspiration, but with the benefits of a smaller incision.

Method

A study included 20 patients who underwent uncomplicated bilateral procedures with one eye randomized to the 2.2 mm procedure using the micro flow sleeve and the fellow eye to surgery through a 3.0 mm incision with a standard silicone sleeve. Surgeries were performed using the same phaco chop technique in both eyes on Bausch and Lomb Millennium phacoemulsification system. All 2.2 mm eyes were implanted with the Akreos micro incision lenses which were implanted using the Bausch and Lomb Akreos single use insertion microincision device and 3 mm eyes were implanted with the Bausch

and Lomb Akreos advanced Optics Aspheric lens which were implanted using the Bausch and Lomb Akreos single use insertion device. An Optometrist unaware of incision size measured astigmatism preoperatively and post operatively at six weeks after surgery using Autokeratometry (Accuref – K, 9001 Shin – Nippon).

Results

Mean induced astigmatism was 0.10 D after 2.2 mm incision surgery versus 0.32 D in eyes with a 3.0 mm incision. Axis shift after surgery in the two groups was 5 degrees and 10 degrees, respectively, and was not significantly different between groups.

Discussion

Most cataract surgeons would agree a truly astigmatism neutral incision should be our target and that while several variables play a role in determining that outcome, incision length is a main factor. The results of this study show that induced astigmatism was statistically and perhaps clinically significantly less with the 2.2 mm temporally oriented clear corneal incision compared with the standard 3.0 mm incision. The incision length is also an important determinant of

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wound stability, saying that future studies should investigate whether this smaller incision also creates greater wound stability with less likelihood of postoperative deformation, wound leak, and potential for infection.

Cataract removal through sub - 2.0 mm incision is possible with implantation of microincision cataract surgery intraocular lenses through the same undilated incision. The current technique allows cataract removal through 1.8 mm and the available microincision cataract surgery intraocular lenses showed optical quality and biocompatibility similar to conventional intraocular lenses.

The recent focus in improving techniques in cataract surgery has been in reducing incision size. Smaller incision result in less induced astigmatism, faster visual rehabilitation and improved wound healing and security. Phacoemulsification machinery has also improved in the recent past. Until recently, incision size for standard phacoemulsification surgery has been limited by intraocular lens (IOL) technology to 2.65 to 2.85 mm. The availability of microincision lens (MIL) technology has made the C/B MICS (coaxial/bimanual MICS) the new standard for phaco surgery with incision size at 1.4 to 2.2 mm C-MICS allows to phaco surgeon to have incision sizes of 1.8 to 2.2 mm using a needle and sleeve combination and B-MICS using a

sleeveless needle with a separate irrigation chopper system utilizing 1.4 mm to 1.6 mm incisions.

Today's phaco machines have better fluidic control, surge control, high - vacuum tubing and other innovation in fluidics, including the dual liner vacuum control on both the Millennium and stellaris phacoemulsification systems (Bausch and Lomb, Rochester, NY, USA).

Fluidics, astigmatism: As we move from larger to smaller incisions we find decreasing rates of induced astigmatism with improved wound security, as well as excellent fluidics with these smaller incision sizes. In B-MICS phaco the incision size to 1.6 mm or less, but two incisions were required, leading to an effective incision size of more than 3 mm also the wound integrity after a sleeveless phaco procedure is not good, thus favouring coaxial MICS.

Conclusion

MICS with MIL definitely gives astigmatically neutral incisions which are stronger and more stable than the conventional phaco emulsification with 3 mm incision and foldable lens. The post MICS surgery the recovery is far better and instant.

Reference

1. Bellucci R, Morselli S. Mini- Incision Coaxial Phacoemulsification. *Techniques in Ophthalmology* 2007; 5 : 85-91.

FACILITATED PCI IN ST-ELEVATION MYOCARDIAL INFARCTION

Immediate percutaneous coronary intervention (PCI) is the treatment of choice for acute ST-segment elevation myocardial infarction. PCI that was "facilitated" by pretreatment with reteplase plus abciximab or abciximab alone *did not* improve clinical outcomes and increased bleeding, calling into question the use of facilitated PCI for the treatment of acute myocardial infarction.

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