An Injector System for the Age of Gentler Phacoemulsification

By Giorgio Santin, MD

In 2011, an estimated 19 million cataract procedures were performed worldwide. Currently in the United States and in most European countries, cataract surgery is the most frequently performed surgical intervention, with hip replacement usually a close second. The growth in the volume of cataract surgery is accompanied by a decrease in the biomechanical damage associated with the procedure. Smooth, self-sealing clear corneal and limbal relaxing incisions and perfectly shaped circular anterior capsulotomies are now state of the art; therefore, they should be matched by lens implantation that best protects the capsular bag, the integrity of which is crucial to postoperative function and patient satisfaction.

Injector systems are nowadays indispensable in microincision cataract surgery (MICS), in which a folded IOL is gently guided through an opening of 3 mm or less. The use of injector systems has greatly reduced the need for manipulation of the IOL with forceps, which can scratch the surface of the lens. Injectors also allow the surgeon to introduce the IOL into the capsular bag without touching the incision site or the conjunctiva, thereby minimizing the risk of infection. This article discusses a user-friendly injector system that offers increased safety and control during lens delivery.

Implantation System for the Tecnis 1-Piece

The Unfolder Platinum 1 Series Implantation System (Figure 1) is part of the microimplantation cataract suite developed by Abbott Medical Optics Inc. This bundle of components also includes Tecnis 1-Piece IOLs, Healon ophthalmic viscosurgical device (OVD), the Whitestar Signature phacoemulsification system, and a variety of accessories for microimplantation procedures. The

Unfolder Platinum 1 is designed for the insertion of Tecnis 1-Piece IOLs, a family of hydrophobic acrylic IOLs with an ultraviolet-blocking filter and a 360° sharp edge to minimize the formation of posterior capsular opacification. The Unfolder Platinum 1 injector system has several features that make it easy to use and load. The loading zone is broad and has a canopy specifically designed to assist with the folding of the leading haptic. The cartridge grip facilitates secure handling, and the lubricious inner coating allows smooth delivery across the dioptic range of the lens.

The Unfolder Platinum 1 uses a screw-style inserter, which, unlike injector systems with syringe-like mechanisms, allows the IOL to be slowly pushed down into the capsular bag. The handpiece, made of durable titanium, features a snap-in cartridge lock that assures correct positioning of the cartridge. The tip of the handpiece is blue for easy visibility of the cartridge and reduced microscope reflections. The cartridge design enables secure and easy loading of the IOL. The use of OVDs belonging to the Healon family is strongly encouraged.

User Experience

In my experience, the Unfolder Platinum 1 is a tool that guarantees perfect control in all phases of loading.
injection, and release of the IOL through 2.2- to 2.4-mm incisions. Using this system, the surgeon is able to work in a safe and secure environment with full control during the delivery of the lens. In no case in my experience has the lens turned into the anterior chamber.

The learning curve with this inserter is limited to the first two to three cases. After the Unfolder Platinum 1 is used for about a dozen cataract operations, its easy handling and safety features will likely be appreciated. It may then be hard to believe that intensive use of forceps during the insertion process was the standard approach just a short time ago.

Using this technique in all cases—both simple and complicated—gives the surgeon complete control over the phases of lens injection. Unpleasant surprises can sometimes occur during this stage of cataract surgery. While watching younger colleagues with less experience, I have noted that their choice of IOL often depends on its ease of injection. With a reliable injector system, this restriction of choice may no longer be necessary.

CONCLUSION

Injector systems continue to evolve, allowing surgeons to place IOLs through increasingly smaller incisions, as noted by Grimes and Henderson.1 In the words of these authors, "These injector systems have greatly improved the safety of MICS while consistently delivering an undamaged IOL."

For IOL delivery that consistently leads to a high level of visual performance and excellent patient satisfaction, a state-of-the-art injector such as the Unfolder Platinum 1 should satisfy experienced surgeons who demand the highest possible safety standards.

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