INCORPORATING PRELOADED IOLs INTO SURGERY

A new preloaded system can boost efficiency, predictability, and safety without requiring any other surgical adjustments.

BY DAVID R. HARDTEN, MD

We surgeons can get stuck in a rut, relying on IOLs that have served us well, for example. I do not like to make many changes to my surgical technique or the tools with which I have become very comfortable, but I believe it is worth reconsidering preloaded IOLs.

Until recently, few preloaded IOL/injector combinations have been available in the United States (see *Preloaded IOLs Available in the United States*), and there have been reports of uncontrolled or inconsistent delivery with some systems.[1] In other cases, preloaded systems have been designed for IOLs not in widespread use, limiting the former's practical application.

When I began using the new Tecnis iTec (Abbott Medical Optics), which is preloaded with the Tecnis 1-Piece IOL (my preferred monofocal lens), I quickly saw the value of incorporating this injector into my surgical armamentarium.

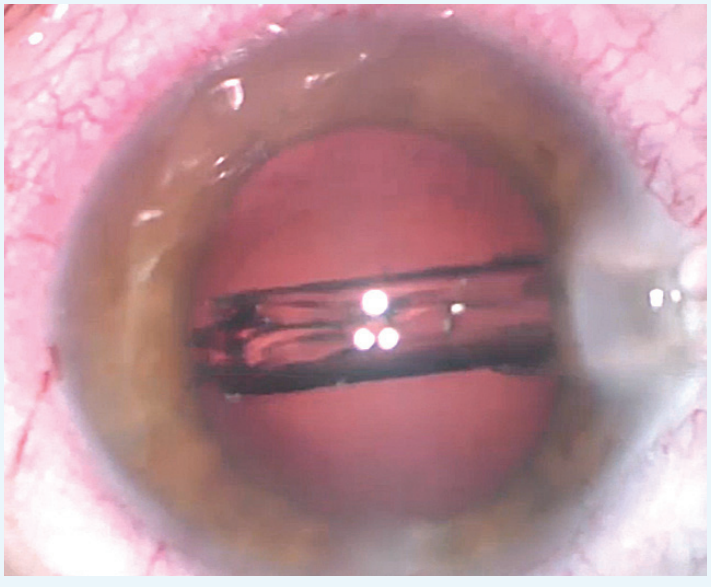

Figure 1. The iTec eases insertion of the Tecnis 1-piece IOL through a small incision.

> **"It is likely that the use of preloaded IOLs can boost efficiency in a high-volume setting."**

EFFICIENCY

Those of us who operate in our own ambulatory surgery center typically have well-trained technicians who are accustomed to loading injectors with our preferred IOLs. In a hospital or multispecialty ambulatory surgery center environment, however, where the scrub technicians have varying levels of skill and experience, a preloaded lens can increase our confidence that the lens will be loaded correctly. It also means we need not spend time instructing or observing technicians as they load the IOL.

I was recently training a technician with a general surgery background to assist with cataract surgery and was pleased with how quickly she was up and running using a preloaded injector. She was able to competently assist me after just a few cases; it certainly would have taken longer than that to train someone new to correctly load IOLs.

It is likely that the use of preloaded IOLs can boost efficiency in a high-volume setting. Having the lens already loaded in the injector saves about 2 minutes of preparation time. In eyes with soft nuclei, the phaco time is sometimes so short that I have to wait for my technician to finish loading the implant. In these situations, a preloaded injector provides a much more efficient handoff (Figure 1). Additionally, the surgical team does not have to worry about having as many different items in

Figure 2. Easy loading of viscoelastic.

inventory and on the OR tray. With no injectors to clean, rooms can be turned over more quickly between cases. I have also found that I use less viscoelastic, because I am not putting it into an open cartridge system (Figure 2).

REPRODUCIBILITY

In my experience, a preloaded injector, especially one with a screw-tip plunger mechanism, allows for very controlled and reproducible delivery of the IOL. Predictability is exactly what we ophthalmologists want for complex cases. When a surgery has already taken longer and has been more stressful than we anticipated—as in the case of a difficult floppy iris/small pupil—it is nice to know that the IOL injection will go smoothly.

Before I considered switching to a preloaded system, it was important for me to know that I would not need to change any other part of my surgical technique (eg, enlarge my incisions). Having to make a larger incision or rely on wound assistance to fit the tip of the injector—and potentially stretch the wound unpredictably—would negate the benefits. I have been able to continue making 2.2- to 2.4-mm incisions and successfully implant the full range of preloaded lens powers through the incision.

When I compare my use of preloaded IOLs to my previous experience, I see how accustomed I had become to the occasionally awkward delivery of a lens or haptic that would tuck into a different spot than I had intended. Even minor errors loading an IOL can result in the implant's tipping or twisting into the bag less predictably, which may require additional surgical manipulation to keep the IOL from moving upside down. This problem is extremely unlikely with a preloaded lens.

The trend throughout cataract surgery is toward enhanced predictability and reproducibility in every aspect of the procedure, and I think preloaded lens delivery fits nicely into this paradigm.

SAFETY

There is no question that a no-touch, disposable, preloaded IOL system helps minimize the risks associated with handling and loading an IOL, including infection, cross-contamination, IOL scratches, or sterilization errors. This has long been of greater concern to our colleagues in Europe, due in part to tighter regulatory guidelines governing the sterilization of medical instruments after outbreaks there of a form of bovine spongiform encephalopathy (mad cow disease). Although we have different standards for sterilization in the United States, it is still worth contemplating the safety advantages of preloaded IOLs.

There are many reasons to reconsider preloaded IOLs: efficiency, predictability, and safety. New delivery systems allow us to have more control over our cases, increase reproducibility, and still give our patients all the benefits of an excellent lens. ■

1. Ong HS, Subash M, Sandhu A, Wilkins MR. Intraocular lens delivery characteristics for the preloaded AcrySof IQ SN60WS/AcrySert injectable lens system. *Am J Ophthalmol*. 2013;156:77-81.

PRELOADED IOLs AVAILABLE FOR USE IN THE UNITED STATES

Hoya	Alcon
iSert 251 (Yellow)	AcrySert C
iSert 250 (Clear)	

David R. Hardten, MD
- director of clinical research and cofounder of Minnesota Eye Consultants, Minneapolis
- (763) 746-7211; drhardten@mneye.com
- financial disclosure: consultant to Abbott Medical Optics