Introducing a New Generation of the AT LISA

The trifocal design provides excellent intermediate vision without sacrificing far and near.

BY DOMINIQUE PIETRINI, MD

Today, the majority of patients presenting for cataract surgery or clear lens extraction are harder to please than those treated in previous decades. Our patients now expect high-quality care, they want perfect or near-perfect vision that rivals the vision they enjoyed in their youth, and they will settle for nothing less than exceptional surgical outcomes.

Luckily, modern IOLs produce outstanding visual quality and state-of-the-art surgical devices can be used to enhance outcomes even further. One of the most promising new modern IOL designs is the AT LISA tri 839MP (Carl Zeiss Meditec). This third-generation lens design is based on the well-known, high-performance AT LISA platform and, in my personal experience, provides patients with excellent functional vision at all distances as early as the day after surgery. More specifically, the AT LISA tri enhances intermediate vision compared with its bifocal predecessor. In my opinion, it is this one-piece, trifocal lens design that gives patients the best chance of leading a spectacle-free, active lifestyle.

I started implanting the AT LISA tri in July 2011, but I also have extensive experience with the bifocal AT LISA. In a study including more than 100 eyes, the mean intermediate visual acuity with the AT LISA bifocal was 20/32, the mean near UCVA was J2, and the mean far UCVA was 20/20. Patients were satisfied with their vision after surgery; however, some complained that intermediate vision was not as crisp as they would have liked.

Now, as one of the main users of the new AT LISA tri, I have noticed that these complaints have disappeared. In the 10 patients included in my initial analysis, mean intermediate visual acuity was 20/25, and the near and far UCVAs were comparable to those achieved with the AT LISA bifocal, at 20/20 and J2, respectively. Figure 1 depicts the similarities in defocus curve of the AT LISA tri versus a bifocal lens designs for near and far UCVA. The defocus curve also shows that the AT LISA tri provides a significant improvement in intermediate vision (Figure 2).

With four haptics, the AT LISA tri is very stable in the capsular bag. Additionally, the trifocal optic design provides specific foci for far, intermediate, and near vision, and it also is designed to correct aberrations to provide sharp vision at every distance.

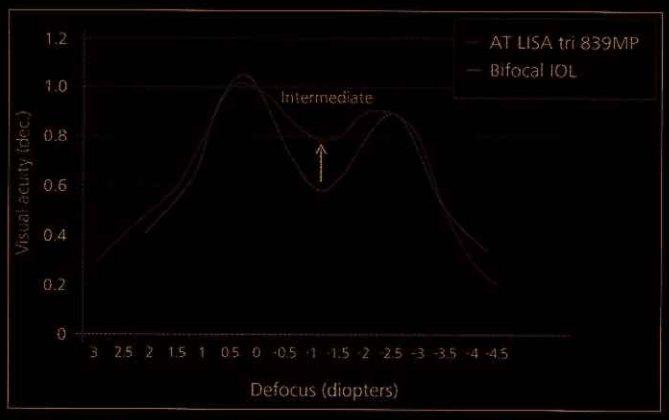

Figure 1. Monocular defocus curve of the AT LISA tri 839MP versus a bifocal IOL.

Figure 2. AT LISA tri 839MP intermediate visual acuity.

INDICATIONS: CLEAR LENS EXTRACTION

Thus far, my main indication for implantation of the AT LISA tri is clear lens extraction. Typically patients who elect clear lens extraction are between the ages of 55 and 65 years old and require exceptional intermediate vision for computer use without sacrificing near or far vision. This IOL is perfectly convenient for patients who need good visual acuity at all distances, and in

QUESTION AND ANSWER WITH DOMINIQUE PIETRINI, MD

Question: In your opinion, what is the largest advantage of the AT LISA tri lens design?

Answer: There is one thing that I like most about the overall design of the trifocal IOL, and that is its pupil independency. This is of the upmost importance, especially in patients with large mesopic pupils, because it will still provide excellent visual performance at any pupil size. Also, the visual performance for intermediate, near, and far are equal regardless of the pupil size. This is especially important for mesopic pupils.

Question: Why do you feel the AT LISA tri is the best multifocal IOL you can offer your patients?

Answer: This lens has so many advantages compared with previous generations of multifocal IOLs, where you had only two visual foci. The bifocal AT LISA is a great lens, and patient satisfaction is high, but there can be a lack of vision in the intermediate range, which is especially important for our young and active patients. This is where the AT LISA tri is so much better, because this evolution in IOL design provides maximum intermediate vision without sacrificing near or far vision.

We know that near vision is important, but, in the clinical experience, intermediate is also very important—it is at least as important as near vision, if not more important. Because the AT LISA tri increases the performance of the entire optical system, I know it is the most appropriate choice for my patients. We have tried to mix-and-match lenses, and although this improves vision at certain distances, the patient does not always find it satisfying. Additionally, we know it is better to implant an IOL with the same multifocality in both eyes, and that is also why the AT LISA tri is such a good option, because it provides patients with good vision at all distances without having to employ a mix-and-match technique with different IOL multifocalities.

Question: In your personal experience implanting the AT LISA tri, how comfortable are your patients with their vision at all distances?

Answer: Patient satisfaction is always very high with multifocal IOLs, as long as the surgeon spends time before surgery explaining the possibility for visual side effects such as halos and glare. Patients must understand that there will always be some type of visual disturbances after multifocal lens implantation, but that these disturbances will decrease over time as part of the neural adaptation process.

With that said, the better the design of the lens, the higher the patient satisfaction will be. I have found that patient satisfaction with the AT LISA tri is exceptional; patients are truly happy with their vision at all distances after surgery. The other important thing is the AT LISA tri aberration-correction design, because we know that when aberration is corrected, vision for each focus is very sharp.

many cases spectacle independence can be achieved for most daily visual tasks.

The AT LISA tri is the perfect IOL for young patients for two reasons. First, the platform is pupil independent. Younger clear lens extraction patients are likely to have a larger pupil than older patients who present for cataract surgery, and they need an IOL that can provide good visual acuity, even in low light conditions. Second, most young clear lens extraction patients are active and do a fair amount of computer work, and this lens provides improved intermediate vision compared with the AT LISA bifocal or other multifocal lens designs.

PATIENT SATISFACTION

Patient satisfaction is a very important consideration when selecting the appropriate IOL to implant, especially for clear lens extraction patients who are paying out of pocket for a premium lens. I have been impressed with my patients' responses to the AT LISA tri, and patient satisfaction has been extremely high, even in the young presbyopic population. In fact, I have noticed that results seem to be better in younger patients because they typically have a healthy retina.

This lens does not compromise vision at any distance, and the main advantage I have seen—and patients appreciate—is that, in most cases, glasses are no longer required for computer work as they may be with the bifocal AT LISA. The principle of the trifocal AT LISA is to provide sharp vision at all distances, and this is achieved through the optic of the IOL, which is an aberration-corrected design.

Additionally, the neural adaptation time with the AT LISA, both the bifocal and trifocal models, is extremely short. Most patients have an immediate

> In my personal experience, [the AT LISA tri] provides patients with excellent functional vision at all distances as early as the day after surgery.

neural adaptation, with sufficient near, intermediate, and far vision the day after surgery. Likewise, patients no longer complain of visual disturbances such as halos or glare postoperatively. This is similar to my experience with the bifocal lens. If halos are present after surgery, patients are not bothered by them and typically decrease with time, disappearing in approximately 1 month or less.

CONCLUSION

At this time, I think that one of the best indications for the AT LISA tri is clear lens extraction. Patients who choose a lens-based option for correction of refractive errors expect spectacle independence and improved vision at all distances, and with such demanding needs I prefer to use an IOL that I know can deliver these requests. I know that the vision provided by this type of IOL is very complete, and it is perfectly suitable for the patient with high expectations. ■

Dominique Pietrini, MD, practices at the Clinique de la Vision, Paris. Dr. Pietrini states that he has no financial interest in the products or companies mentioned. He may be reached at tel: +33 1 58 05 2000; fax: +33 1 5805 2001; e-mail: dpietrini@club.fr.