The progression of age-related macular degeneration (AMD) can lead to a decline in the ability to see fine detail and a loss of central vision in one or both eyes. Every day, more than 15 million senior citizens in the United States live with the increasingly debilitating effects of AMD. Advanced AMD has been shown to increase stress and depression and also creates difficulties for patients in managing the tasks of daily living.

In addition to AMD being the number one cause of severe vision loss and legal blindness in adults over the age of 60 in the United States, as the population ages and the baby boomers advance into their 60s and 70s, the prevalence of AMD will increase. It is estimated that 14% to 24% of the US population aged 65 to 74 years and 35% of people aged 75 years or more will have the disease.

Until recently, there have been few options to offer patients who progress to advanced AMD. Targeting vascular endothelial growth factors has greatly improved outcomes for patients with neovascular (wet) AMD. When scarring (fibrosis) occurs, however, sight is permanently compromised. Also, even if wet AMD progression is slowed with anti-vascular endothelial growth factors (anti-VEGF) therapies, progression of underlying geographic atrophy can also leave patients legally blind due to central vision loss in both eyes. To date, there are no approved medical therapies to reverse damage in eyes with advanced atrophic (dry) macular degeneration.

**A NEW SURGICAL INTERVENTION**

The Implantable Miniature Telescope (VisionCare Ophthalmic Technologies) is the first and only surgical intervention approved by the FDA for patients with advanced AMD (July 2010). The telescope implant, which employs a Galilean telescope design, combines wide-angle microoptics with the optics of the cornea to create a telephoto system that magnifies objects in view. Specifically, the device is surgically implanted monocularly in the capsular bag after removal of the eye’s lens and is held in position by haptic loops. The other eye remains “as is” to preserve peripheral vision.

The telescope implant, along with the cornea, enlarges images in front of the eye approximately 2.2 or 2.7 times their normal size, depending on the model. The magnification allows central images to be projected onto healthy perimacular areas of the retina instead of the macula alone where breakdown
Institute Visual Functioning Questionnaire VFQ-25. of-life improvements as measured by the National Eye results, it is not surprising to find significant quality-improved BCVA demonstrate that, at 12 months postoperatively, more than 90% of telescope implant recipients reported improved ability to read, recognize faces, and manage the tasks of everyday living—tangible benefit over traditional cataract surgery.

**FUTURE DIRECTIONS**

Already a Medicare-eligible procedure, the telescope implant surgery is most often performed in an outpatient, hospital setting. It is expected that in 2015, Medicare ambulatory surgery center payment system rules will allow for the procedure to be more easily accommodated in an ambulatory surgery center. This will make the procedure a better fit for most corneal surgery practices, as they can leverage their existing infrastructure and business model, working alongside retinal colleagues. Therefore, there may be more opportunities for physicians to consider the telescope implant procedure for their patients living with the most challenging form of the disease.

**CONCLUSION**

Despite significant evidence that the telescope implant is a good option for specific patients, one of the most common reasons to reject a motivated patient who has advanced AMD and meets other telescope implant criteria is previous cataract surgery in the target eye. Notwithstanding the AREDS2 data, other studies vastly conflict regarding the effect of cataract surgery on the progression of AMD in any stage. Personally, I carefully approach cataract surgery in patients with advanced AMD because the improvements in visual acuity can be too small to be appreciated by patients. With the availability of the telescope implant, it is now the standard of care at our practice for appropriate candidates. Telescope implant recipients report improved ability to read, recognize faces, and manage the tasks of everyday living—a tangible benefit over traditional cataract surgery.

Sumit “Sam” Garg, MD, is the interim chair of clinical ophthalmology, vice chair of clinical ophthalmology, and medical director at the Gavin Herbert Eye Institute at the University of California, Irvine, School of Medicine. He acknowledged no financial interest in the product or company mentioned herein. Dr. Garg may be reached at gargs@uci.edu.

---

**TELESCOPE IMPLANT CRITERIA**

To be considered a candidate for the telescope implant, a team comprising a retinal specialist, corneal surgeon, a low vision optometrist, and/or occupational therapist evaluate patients who must:

- have retinal findings of geographic atrophy or disciform scar with foveal involvement, as determined by fluorescein angiography
- have evidence of a visually significant cataract (> grade 2)
- agree to undergo presurgery training and assessment with low vision specialists in the use of an external telescope sufficient for patient assessment, and for the patient to make an informed decision
- achieve at least a 5-letter improvement on the ETDRS chart with an external telescope
- have adequate peripheral vision in the eye not scheduled for surgery
- agree to participate in postoperative visual training with a low vision specialist

Full prescribing information may be found at www.CentraSight.com.

---