

New surgical implant restores some vision in patients with age-related macular degeneration

September 13 2012

(Medical Xpress)—Surgeons at UC Davis Medical Center have successfully implanted a new telescope implant in the eye of a patient with end-stage age-related macular degeneration (AMD), the most advanced form of the disease and a leading cause of blindness in older Americans.

The device, approved by the [Food and Drug Administration](#) in 2010, is the only medical/surgical option available that restores a portion of vision lost to the disease. UC Davis Health System's Eye Center, in collaboration with the Society for the Blind, is one of the few in California and the nation to offer the innovative procedure.

"Macular degeneration damages the retina and causes a blind spot in a person's central field of vision. The telescopic implant restores vision by projecting images onto an undamaged portion of the retina, which makes it possible for patients to again see people's faces and the details of objects located directly in front of them," said Mark Mannis, professor and chair of ophthalmology and vision sciences and director of the Eye Center at UC Davis Health System.

The exact cause of dry macular degeneration is unknown, but the condition develops as the eye ages. The macula is made up of millions of light-sensing cells that provide sharp, detailed central vision. It is the most sensitive part of the retina, which is located at the back of the eye.

The retina quickly turns light into electrical signals and then sends these electrical signals to the brain through the [optic nerve](#). The brain translates the [electrical signals](#) into images. If the macula is damaged, fine points in these images are not clear.

In May, UC Davis cornea specialists Mannis and Jennifer Li implanted the miniature telescope, which is smaller than a pea, in the left eye of 89-year-old Pollock Pines resident Virginia Bane, an artist who stopped painting four years ago when macular degeneration took away her [central vision](#). Bane is the first in Northern California and among the first 50 individuals in the nation to receive the implant.

"I can see better than ever now," Bane said. "Colors are more vibrant, beautiful and natural, and I can read large print with my glasses. I haven't been able to read for the past seven years. I look forward to being able to paint again."

Since her surgery, Bane has been working with Society for the Blind optometrists and UC Davis occupational therapists to learn how to use her new telescopic eye.

"Virginia's vision will keep getting better and better over time as she retrains her brain how to see. She basically uses her left eye with the telescopic implant to see details, such as using a microwave keypad and reading a book," said Richard Van Buskirk, an optometrist with the Society for the Blind in Sacramento who specializes in treating patients with low vision. "Her untreated right eye provides peripheral vision, which helps with mobility, such as walking or navigating within her home. Ultimately, her brain will automatically make the shift, using the capability of each eye as needed."

UC Davis retina specialists who treat macular degeneration and other back-of-the-eye disorders coordinate the treatment program with

optometrists who specialize in caring for patients with low vision. Patients undergo medical, visual and functional evaluations to determine whether they are good candidates for the procedure. A unique aspect of the evaluation is the ability to simulate, prior to surgery, what a person may expect to see once the telescope is implanted. The simulator helps patients determine if the improvement meets their expectations.

Candidates for the procedure include individuals with untreatable end-stage, [age-related macular degeneration](#) (dry form) who are 75 or older and whose disease is stable but severely impairs vision. Candidates must have adequate peripheral [vision](#) in the [eye](#) that will not receive the implant and have no other ocular diseases, such as glaucoma.

More information: Patients and physicians can find more information about the telescope implant and treatment program at UC Davis Health System Eye Center (916-734-6074), the Society for the Blind (916-452-8271) or CentraSight (877-99SIGHT).

Provided by UC Davis

Citation: New surgical implant restores some vision in patients with age-related macular degeneration (2012, September 13) retrieved 6 May 2024 from <https://medicalxpress.com/news/2012-09-surgical-implant-vision-patients-age-related.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--