



Dr. Jonathan A. Primack, an eye surgeon with Eye Consultants of Pennsylvania in Wyomissing, prepares to examine the right eye of Anna Sensenig, 88, of Earl Township, Lancaster County, a patient who successfully underwent a new type of corneal surgery.

Reading Eagle: Lauren A. Little

Eye-opening procedure

A relatively new operation is much less invasive than traditional corneal transplants. An 88-year-old woman recently became the first patient in Berks County to have the surgery.

By Bruce R. Posten
Reading Eagle

DR. JONATHAN D. PRIMACK, 37, an eye surgeon at Eye Consultants of Pennsylvania in Wyomissing, is a self-described "cornea geek."

When you meet him, what that description appears to mean is that he is passionate about studying the intricacies of the human eye and finding ways to improve its health.

He is apparently committed to communicating eye information to others as simply, sincerely and enthusiastically as possible.

Primack does this so people can appreciate and maybe even personally benefit from scientific knowledge and, perhaps, become so swept up in a surgeon's explanation of the elegance of eye surgery that they imagine becoming cornea geeks, too.

To believe that is not a stretch even for those who may turn squeamish at the thought of an eye operation.

"Doctor, after I promised you I'd do this surgery ... I thought, why is this old lady doing something like this at my age?" said 88-year-old Anna M. Sensenig of Earl Township, Lancaster County, a retired Mennonite widow, mother of six, grandmother of 13, the first patient in Berks County to undergo a new type of corneal surgery at the hands of Primack.

"But you know what?" she asked, sitting in Primack's office for a checkup three weeks after her operation in early October, patiently allowing other area optometrists and ophthalmologists to inspect the successful surgery. "Now I'm glad I did it. There was no pain to it. I'd

recommend it to anybody."

Primack, not normally at a loss for words, smiled and managed to simply utter, "Thank you."

Less invasive operation

Sensenig is the beneficiary of what's known as DSAEK (Descemet's Stripping and Automated Endothelial Keratoplasty), a much less invasive operation than a full-blown corneal transplant for those suffering from corneal swelling (known as corneal edema) that leads to vision loss.

Of the roughly 46,000 cornea transplants performed last year nationwide, about one-third of them (more than 10,000 to 15,000) involve corneal swelling, according to the Eye Bank Association of America.

As an area ophthalmologist, Primack said he usually performs between 40 and 50 cornea transplants a year.

"This procedure is head and shoulders beyond anything that we had before," Primack said, noting that DSAEK has been around six or seven years, evolving slowly into a more perfected state in the last year.

"It is a more surgical friendly approach and less technically challenging now," he said. "For those who are good candidates for this operation, there is no longer a need to do a full-thickness cornea transplant, which means an improved quality of life for the patient."

"What can I say to compare — it's like the difference between the steam engine and getting the gasoline engine," he said, referring to the perfecting of technology and art of the operation.

However, the bottom line and benefit for patients, according to Primack, is the new corneal procedure, compared to a cornea transplant, is less invasive with a much smaller incision (three stitches versus 16 to 24, for example), allows for greater safety and less chance of infection, results in good vision within weeks instead of up to a year and dramatically reduces the chance of astigmatism or less than optimal vision after the operation.

"In all of medicine, we are striving toward less invasive procedures that accomplish our goals," Primack said.

"I just happen to love what I do," he said. "It (eye surgery) is fascinating, intellectually stimulating and so precise, because a half a millimeter movement in any direction can affect the outcome, so, yes, less is definitely more in these procedures."

Offering new surgery

Primack said he and a partner, Dr. Adam Altman, another eye surgeon in the firm learning about the procedure, will be offering the new surgery to those candidates who qualify.

"It is not a surgery for everybody — some will still need the full cornea transplant, but it will be a wonderful opportunity for a great many," he said.

Sensenig, naturally, can speak to that. After two cataract surgeries last year, she still suffered with cloudiness in her right eye.

Diagnosed with Fuchs' Dystrophy, a genetic disease of a thin cell lining inside the eye that prevents water being pumped out of the cornea, resulting in swelling and vision loss, Sensenig was deemed a prime candidate for the new corneal surgery.

"For years I had cataracts and was using a magnifying glass to read, but I didn't bother too much about it," said Sensenig, who has worn glasses since she was in her 20s.

With worsening vision, she finally took steps to improve her lot.

"The surgery was performed right here," she said. "I was in and out in couple hours, no pain at any time. I had a patch till the next day. When I took the patch off, two or three days maybe, things were a little cloudy, but all of a sudden it happened — my vision cleared."

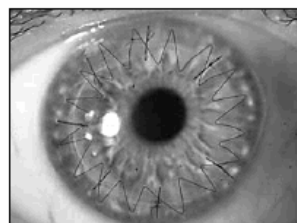
"It is truly an elegant surgery," Primack said. "And, Anna, your eye looks great. Continue to do what you're doing. I'll see you again in three weeks just to check."

■ Contact reporter Bruce R. Posten at 610-371-5059 or bposten@readingeagle.com.

Explaining the differences

What is a corneal transplant? What is the new DSAEK (Descemet's Stripping and Automated Endothelial Keratoplasty)? How do they compare? Here is a brief look:

Corneal transplant



1. A donor cornea is cut full thickness in a circular shape measuring 8.25 millimeters in diameter. (A normal cornea measures 12 by 11 millimeters)

2. The patient's cornea is then cut, creating a full thickness disc of tissue measuring 8 millimeters in diameter.

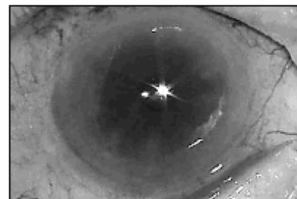
3. Under an operating microscope, the surgeon removes the patient's swollen cornea and sews the donor cornea into place with its healthy endothelium, a critical layer of cells that keep water flowing out of the cornea but sometimes become diseased or traumatized.

4. The surgeon normally places about 16 to 24 stitches to secure the new cornea in place.

5. The stitches often produce irregularity of the surface and are selectively removed over the following 12 months.

6. Despite a crystal clear corneal transplant, patients can have irregularities of the corneal surface that persist even after stitches are removed, resulting in high levels of astigmatism and less than optimal vision.

DSAEK



1. Through a tiny, peripheral incision, the surgeon removes the patient's Descemet's membrane and dysfunctional endothelial cells from the back surface of the cornea.

2. The donor cornea is carefully dissected with an instrument called a microkeratome to remove the anterior four-fifths of tissue, leaving behind a thin layer of cornea containing healthy endothelial cells.

3. This thin corneal tissue is cut into the shape of an 8 millimeter diameter disc.

4. Under an operating microscope, the disc is folded in half and inserted through the small incision.

5. The surgeon unfolds it inside the eye and injects an air bubble to help the disc of the donor cornea adhere to the back surface of the patient's cornea.

6. The disc sticks to the back of the patient's cornea and the donated endothelial cells begin functioning over several days to produce a clear, nonswollen cornea.

7. The patient sees well within days to weeks because, unlike a full-thickness corneal transplant, this minimally invasive technique requires no stitches on the cornea.

(Source: Dr. Jonathan D. Primack, ophthalmologist at Eye Consultants of Pennsylvania, Wyomissing.)