Laser Eye Surgery Professionals on Risks and Benefits

By ACSH Staff — July 12, 2002

Every year over 1.5 million adults choose to have some type of vision correction surgery to rid themselves of glasses and/or contact lens dependence. The most popular of these surgeries is LASIK. While glasses and contacts correct a person's eyes with a prescription, LASIK uses a laser to put the prescription directly on a person's cornea the front, clear portion of the eye. The LASIK procedure can correct relatively high degrees of nearsightedness and astigmatism as well as farsightedness.

Guidelines to inform patients whether they are potential LASIK candidates were issued on June 4, 2002 by the Eye Surgery Education Council (ESEC), an initiative of the American Society of Cataract and Refractive Surgery (ASCRS). One third of Americans who wear contact lens or glasses have considered LASIK surgery. However, the Harris survey conducted in March 2002 elucidates the lack of public knowledge about refractive surgery: 31% of those surveyed were unaware that a medical degree was required to perform LASIK, while about one in four (23%) people perceived laser eye surgery as a cosmetic rather than medical procedure. Another 41% reported that anyone with imperfect vision is a candidate for LASIK surgery. (See http://www.eyesurgeryeducation.com/ESEC_News.html [1])

One of the most common misconceptions about LASIK is that a surgeon can guarantee that a patient will see with 20/20 vision after the procedure. The outcome of LASIK depends on many factors such as the skill of the surgeon; the thickness, contour, and health of the cornea; as well as patient compliance. Certain medical conditions such as autoimmune, rheumatologic, or connective-tissue disease, or poorly controlled diabetes may prevent the optimal LASIK result. These conditions also increase the risk of other post-operative complications as explained below. Patient compliance to pre- and post-operative instructions is also imperative. The well-informed and compliant patient is more likely to achieve a good outcome. Compliance to post-operative instructions can prevent potentially vision-threatening conditions.

Even if patients who have experienced LASIK surgery do not report discomfort, they could have epithelial ingrowth, a problem occurring in 10% or more of patients in which the outer corneal layer grows underneath the flap that is made in the eye surface during surgery to allow the laser access to the middle layer of the cornea. Most epithelial ingrowth cases are insignificant and asymptomatic. However, in 1% of patients with this problem, the surgeon must relift the flap and remove the ingrown cells. If not removed, these cells can discharge enzymes that dissolve the flap. If properly diagnosed, this condition is usually easily treated. Another potential problem after surgery is the occurrence of flap folds, which are wrinkles in the flap formed when it is repositioned on the cornea. These folds do not usually affect vision. In 1% or more of cases with flap folds, the
flap needs to be relifted and smoothed out. (See www.refractivesource.com [2])

Post-operative complications are the major concern of most potential patients. The most frequent of these problems are night vision disturbances such as night glare, halos, and sensitivity to light which are usually caused by the pupil dilating outside of the ablation region (the area affected by the laser). People with light eye color generally have larger pupils and thus are more at risk for these problems. People with large prescriptions are also more at risk because of the necessarily larger amount of tissue removed during surgery. LASIK surgeons should examine the pupil pre-operatively to assess whether a large pupil size will increase the risk of the above complications. However, these problems are usually mild to moderate in nature, usually abate within one to three months, and do not deter most potential patients from undergoing LASIK surgery. Moreover, the incidence of night vision problems may be over-reported. Some 25-35% of patients report some night vision problems, but many candidates for eye surgery either reported night vision problems even before surgery or made fewer attempts to see distant objects at night prior to getting surgery.

On rare occasions LASIK surgery can cause loss or impairment of vision of vision. Impairment may result from infection, irregular scarring, or other causes but may be treatable with antibiotics, steroids, or other medicines. There are no formal studies of the rate of total blindness among those undergoing LASIK because the incidence is approximately 1/1,000,000. A full study would have to enroll millions of patients to discern the true percentage. To put this ratio in perspective, the risk of blindness from LASIK surgery is less than that of being struck by lightning.

A somewhat more common problem is that patients’ sight does not quite correspond to their ideal "prescription" after surgery, since the final outcome of the surgery and the precise refractive power of the lenslike tissue operated upon hinges partly on how much and how quickly the patient’s eye surface heals after surgery, something that cannot always be perfectly predicted before the operation. If there is enough corneal tissue remaining after the initial surgery, the surgeon can later relift the flap and perform an enhancement. The enhancement is very similar to the original LASIK procedure.

As with all medical procedures the easiest route to the best outcomes is patient-doctor communication. Prior knowledge of the condition and thought about the advantages and risks is also helpful. Internet sites and advertising may not always be factual; the most reliable method is choosing an experienced LASIK surgeon who has performed at least 1,000 procedures and making sure all your questions and concerns are adequately answered.

Dr. Chynn is a LASIK surgeon in New York City and an ACSH Advisor.
Margaret H. Gross is a pre-medical student at the University of Pennsylvania and is currently interning with Dr. Chynn.

COPYRIGHT © 1978-2016 BY THE AMERICAN COUNCIL ON SCIENCE AND HEALTH

Links