PRK

Introduction

The purpose of this assignment is to differentiate three levels of definitions for different audiences. First we create a parenthetical definition, which concisely defines the term, then a sentence definition, containing more elaboration along with a comparison. Finally, a sentence definition, which includes a background and detailed description of the term.

Parenthetical definition

PRK (Photorefractive Keratectomy) is a type of laser eye surgery.

Sentence definition

PRK (Photorefractive Keratectomy) is a type of laser eye surgery used to correct refractive errors of the eye such as Myopia, Hyperopia, and Astigmatism. This type of surgery differs from Lasik eye surgery in that a flap of corneal tissue is not created and replaced after the laser has finished molding the inner cornea. This means that more corneal tissue is left which structurally supports the eye, though the healing time of PRK is around 6 days as opposed to Lasik's 24 hours.

Extended Definition

PRK (Photorefractive Keratectomy) is a type of laser eye surgery to correct for refractive errors of the eyes such as Myopia, Hyperopia, and Astigmatism.

Origin

The first procedure of PRK was performed in 1987, preceding other types of laser eye surgery such as Lasik. Before PRK, surgeons used cuts around the cornea, which would cause the eye to heal into a desired shape, hopefully fixing the patient's refractive error. This method was less than exact, and often patients would still have to wear corrective lenses after the surgery. With the advent of PRK, which uses a laser to control the reshaping of the eye, many more patients were able to achieve 20/20 vision. Lasik eye surgery supersedes PRK, however Lasik cuts a corneal flap, which is then used to bandage the treated surface. The flap does not aid in the structural integrity of the eye, and may cause other complications if dislodged. For this and other reasons,

PRK is a widely used form of laser eye surgery.

Procedure



Step 1. Alongside numbing drops, an alcohol solution is placed on the eye to help soften the cornea.



Step 2. The surgeon then smooths the surface of the cornea with a special surgical instrument.

Step 3. An excimer laser is then used to precisely reshape the curvature of the cornea's surface.



Step 4. A bandage-like soft contact lens is then placed on the cornea to help protect the eye as it heals.

The procedure involves the removal of the outer epithelial layer of the eye using either a blunt scraping instrument, or alcohol, which loosens the epithelium, then a brushing tool to remove the epithelium and smooth the cornea. A computer-guided laser is then used to remove tens of micrometers of tissue from the cornea. This shapes the lens of the eye so that the patient will no longer require contacts or glasses after the surgery. A contact lens is then placed on the eye as a bandage, which the patient must wear for approximately 3 days. This bandage lens protects the eye as a new epithelium layer grows back to cover the cornea.

PRK Procedure

Healing

Healing time for PRK usually range from 3 to 6 days, perhaps longer depending on the individual. This is in contrast to Lasik, where it is common for patients to be able to go back to work the next day. During the healing time, the patient must self-administer eye drops at prescribed intervals. The regimen for drops usually includes a lubricant, a steroid, and an antibiotic. These drops aid in proper healing and eye health. Dry eye is a common side effect of PRK in the days after surgery. Some patients find their dry eye symptoms to be quite severe and may need to administer drops at hourly intervals, or even less. Some patient also find the healing process for PRK quite painful, and may require a prescription for painkillers.

On the third day post surgery, the patient will be examined for epithelial regrowth, and if all is well, the bandage contact will be removed. Usually patients at this stage are still not at 20/20 vision, and with the removal of the bandage contact, many patients will find their vision to be slightly

worse than with the contact in. This is normal, as the eye must now adjust to healing on its own without aid.

On day 6, many patients will be able to see close to 20/20 with perhaps some blur. Final vision outcome could take up to a year to manifest.

Common Side Effect

Haze is often reported as a side effect of PRK surgery. This is when the patient sees light scattering from light sources, as if the patient is in a dense fog. Even when patients are able to see 20/20, there may still be haze. As the epithelium heals fully, haze will dissipate.

References

 PRK Laser Eye Surgery: What Is PRK and How Does It Differ From LASIK? - Web, Jan 22, 2015.

http://www.allaboutvision.com/visionsurgery/prk.htm

- LASIK vs. PRK: What is the Difference? Web, Jan 22, 2015. http://www.lasik.com/articles/lasik-prk-difference
- The PRK Experience Web, Jan 22, 2015. http://occlasik.ca/prk-experience/