



The Miracle of Modern Cataract Surgery: NO NEEDLE, NO STITCH, NO PATCH

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THE NORMAL EYE

The human eye is often compared to a camera. Like a camera, the eye has a clear lens that focuses light rays on the retina, which is the delicate lining in the back of the eye. The retina is analogous to the film in a camera. Prior to passing through the lens, light travels through the pupil, which is the round opening in the colored part of the eye known as the iris. The pupil opens and closes to control the amount of light entering the eye just as the diaphragm in a camera does. Once the retina is stimulated by light it transmits the image through the optic nerve to the brain where it is interpreted as an identifiable object. Periodic eye exams will help to determine if one's eyes are functioning properly.

WHAT IS A CATARACT?

A cataract is a clouding or opacification of the normally clear focusing lens of the eye. Light cannot pass through the cloudy lens easily to the retina resulting in blurred vision. This clouding occurs when proteins in the lens change, most commonly as a result of aging. Other causes of cataract include trauma, medication such as steroids, inflammation in the eye, and medical problems such as diabetes. Cataract formation is usually associated with a gradual progressive loss of vision. Frequent symptoms include: hazy, cloudy or blurred vision (e.g. difficulty with distant road signs, following a golf ball, reading a newspaper or seeing the TV screen). Additional symptoms may include glare or halos around lights, difficulty judging distances, and colors appearing faded or indistinct.

HISTORY OF CATARACT TREATMENT

Years ago, one waited until blindness set in from a "mature" or "ripe" cataract since the surgical techniques were limited. The recovery included lying motionless for days with sandbags anchoring one's head! Numerous stitches were necessary to close the large surgical wound. These stitches caused distortion of the cornea, known as astigmatism, which significantly affected the vision. Postoperatively, patients required thick "Coke-bottle" glasses or contact lenses to see - both had disadvantages.

ADVANCEMENTS IN CATARACT SURGERY

Over the past 25-30 years, there have been great advancements in techniques and technology concerning cataract surgery. Typically, the surgery is on an outpatient basis and the recovery time is much shorter. There are much fewer postoperative limitations and restrictions. The most popular modern technique for cataract extraction involves the use of high frequency sound waves to gently break up the cataract into tiny pieces. In this sophisticated technique, known as phacoemulsification, ultrasound waves vibrate at approximately 40,000 cycles per second. Rather than expressing the large cataract out of the eye in bulk, the tiny pieces are

simultaneously removed through a microscopic suction device. The entire process is performed through a tiny incision measuring less than 1/8 of an inch!

Phacoemulsification is the gold standard in cataract surgery. Over the past 1 to 2 years, there has been new excitement about laser cataract surgery. This has recently been FDA approved and it is in its infancy. There are misconceptions about laser cataract surgery. Currently, the laser can perform incisions for astigmatism as well as those needed to enter the eye with instruments. It can also open the capsule around the lens to give access to the cataract. Finally, it could soften the cataract if it is hard. With the exception of the latter, all of these procedures have been performed with great success over the past 3 decades without the need of a laser! Furthermore, manual phacoemulsification (the main procedure for removing the cataract) is still necessary in conjunction with the laser! Finally, regardless of insurance, there is a substantial out of pocket cost to the patient who desires laser. Other disadvantages of the laser include: more time consuming, the patient needs to move to 2 different machines, parts of the procedure can actually be more difficult to perform. There is no peer reviewed journal article providing evidence that final visual outcome is superior with use of the laser. Having said that, this is an exciting time and the technology is sure to improve.

Once the cataract is removed, it is replaced with an artificial lens known as an intraocular lens implant. Lens implants, smaller than the diameter of a pencil, are made optically correct for each individual, just as eyeglasses are. These implants also last a lifetime. Modern implants are made out of a pliable material such as silicone or acrylic. This allows the implant to be folded “like a taco” and inserted through the small surgical wound. The implant then unfolds in the eye in a controlled manner. This allows the small un-enlarged wound to self-seal without a stitch! This results in less induced astigmatism, less inflammation, more rapid healing, and more rapid visual recovery.

There are many choices for lens implants and it is critical to discuss this at length with your surgeon. Now one can choose from “multifocal” lenses or lenses that correct astigmatism. Many patients are not candidates for these advanced technology lenses and they must be aware of the limitations and potential side effects. Advanced technology lenses typically have an out of pocket cost to the patient. In the right candidate, they perform extremely well.

NO NEEDLE, NO STITCH, NO PATCH

The state-of-the art technique is performed with no needle, no stitch, and no patch. Before the development of this technique, anesthesia for cataract surgery was generally given by a needle injection behind the eye. This would not only numb the eye, but also paralyze the eye movement. Utilizing the injection, a patch over the treated eye was required postoperatively. With this procedure, there is a risk of the needle perforating the eye or blindness from severe bleeding behind the eye. There is also the risk of a droopy eyelid and permanent double vision from the injection. Also, patients on blood thinners, such as Coumadin, may be advised to discontinue their medication for several days preoperatively. This poses a great risk to patients in regards to blood clots and stroke.

Although the injection technique is still being used, and may in fact be preferred in certain situations (e.g. tremors, dementia, mature cataract, or uncooperative patient), the no needle, no stitch, and no patch cataract surgery has dramatically grown in popularity due to its safety and success. This new procedure replaces the needle injection with the use of topical numbing eye drops as the anesthetic. By eliminating the needle, there is

no risk of perforation of the eye. There is also minimal to no bleeding because the small incision is made through the clear cornea which does not contain blood vessels. Patients do not have to stop their blood thinners. After the surgery there is no need for a patch because the eye drops do not paralyze the eye and cause double vision like the needle injection. In addition, with the small, self-sealing sutureless wound there is less inflammation, less ocular discomfort, and less induced astigmatism. Due to the speedy recovery, many patients are seeing well the same day of surgery. The operative eye frequently looks as good as the other eye as if no procedure was performed! Patients return to their daily activities the very next day. With the recovery being quicker, those patients who need glasses will be able to obtain the correct prescription earlier than they could with the older surgical techniques.

WHEN SHOULD CATARACT SURGERY BE CONSIDERED?

The decision to have cataract surgery is an individual one and the ophthalmologist can assist in this process. A cataract can be removed at any stage of its development and one does not have to wait until it is "ripe". In fact, waiting until the cataract becomes mature makes the cataract extraction much more difficult for the surgeon and there is a higher incidence of complications. When the visual impairment from cataract interferes with one's job or daily activities it is reasonable to consider surgery. Many patients decide to have surgery when they begin having difficulty with halos or glare from lights, driving, reading, or following the golf ball. Cataract removal is one of the safest and most effective surgical procedures. However, like all surgeries, there are certain risks of complications which the patient should be informed about preoperatively.

CONCLUSION

In summary, small incision cataract surgery under topical anesthesia has enthusiastically grown in popularity to become the preferred technique. There are overwhelming reports of rapid return to excellent vision, faster healing time, less induced astigmatism, and generally happier patients. For these reasons, the trend toward further improvements in technology with no needle, no stitch, and no patch cataract surgery will continue.

Neil B. Zusman, MD, FACS specializes in no needle, no stitch, no patch cataract surgery. He also offers comprehensive eye care including evaluation and treatment of glaucoma, evaluation of diabetes and macular degeneration, laser eye surgery, eyelid surgery and reconstruction, contact lenses, and exams for children and adults. There is an optical shop and a licensed optician on the premises offering the latest styles in glasses. For further questions about modern cataract surgery or other eye care needs please do not hesitate to call 941 624-4500.

Since 1988, Dr. Zusman, Board Certified in Ophthalmology, provides a range of services from routine eye exams to medical and surgical treatment of eye diseases. [Zusman Eye Care Center in Port Charlotte, FL](#) prides itself on offering state of the art equipment in a modern, comfortable office setting. Dr. Zusman has been named a "Top Florida Doctor" (Florida Monthly) and a "Most Recommended Physician" by National Consumers Survey for Florida.
