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Review article

Implantable Contact Lens (ICL): Superlative contact lens alternatives

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Abstract

The ICL is also known as phakic IOL and implantable Collamer lens. It corrects the various vision problems like severe myopia, hyperopia, and astigmatism permanently. It corrects the refractive error in the same way that external contact lens does, except it is surgically inserted inside the eyes where it permanently improves the vision. Phakic derived from the Greek word "phakos" means lens refers to the artificial lens. It is similar to the intraocular lens, which is used for cataract surgery to replace the natural lens of the eye, however, in ICL surgery the natural lens is not removed and placed in front of the natural lens. The ICl procedure produces very little discomfort to no discomfort and success rate is 95 percent. Currently, it is approved by united states FDA (Food and Drug Administration) that treat a wide range of Myopia. It is made up of Collamer, high biocompatible advanced lens materials which never produce harm to the eyes, protects the eyes from ultraviolet rays and allows it to stay in the eyes for a long duration. It is a permanent yet reversible procedure means in case of vision change the doctor can remove the lens and replace with another one. Implantable contact lens not required any maintenance as it placed inside the eyes. The visual recovery in this procedure is fast and noted within an hour of the procedure. ICL lens is manufactured in Switzerland by STAAR Company.

Key words: Anxiety Implantable Contact Lens, Phakic intraocular lens, myopia, hyperopia and astigmatism.

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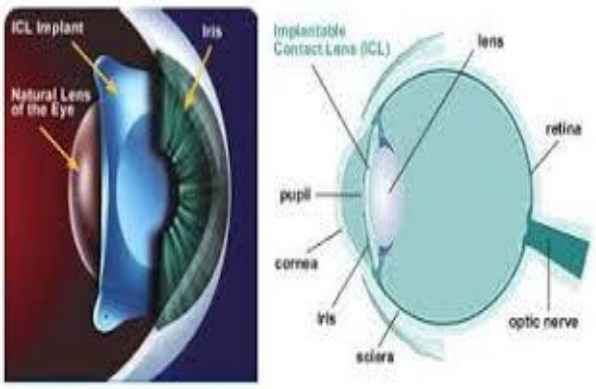
1. Introduction

Refractive errors are very common ophthalmologic problems. Implantable contact lens (ICL) implantation has received attention for its excellent and rapid visual and refractive results in eyes with high myopia. It is safe and has a 95 percent success rate even have a complication such as opacity of the lens, increased intraocular pressure, Inflammation, double vision and visual disturbance [1]. ICL is a surgical treatment of all types of refractive errors in which Pairs of Implantable contact lens (ICL) is surgically placed inside the eyes with the patients' natural lenses.



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It is also called as implantable Collamer lens. These lenses, thus, work with the natural lens of your eyes to improve your vision. Implantable contact lens (ICL) is made up of Collamer, a high biocompatible advanced lens material which does not produce any reaction and harm to eyes and it also protects the eyes from harmful UV rays [2, 3]. [Figure 1]

The indication of ICL Surgery

- Myopia(Nearsightedness)
- Hyperopia (Farsightedness)
- Astigmatism

The ICL differ from other refractive procedures

- It is a reversible procedure
- Fast recovery
- No corneal tissue removal
- Painless procedure
- It is used for all types of refractive error
- It protects the eyes from Ultraviolet rays
- A person can enjoy activities like swimming and scuba diving
- Proven track record
- High Quality of Vision
- The shape of the Cornea remain same

A suitable ICL candidate

1. Candidates for the ICL are above 18 years of age, suffer from myopia (nearsightedness), hyperopia (farsightedness) and/or astigmatism (cylindrical power) and want to experience superior vision correction.
2. Candidate with refractive error who are unsuitable for laser refractive surgery.
3. Prospective persons should consult his/her ophthalmologist (eye surgeon) for more information, including an assessment of their candidacy.
4. Women who are pregnant or nursing should wait to have the ICL implanted. Lastly, those without a large enough anterior chamber depth or endothelial cell density may not be a good ICL candidate.
5. Candidate eye should be free from an infection.
6. Candidate should not have any ocular disease such as cataract and glaucoma.
7. The candidate had an unchanging vision correction prescription for at least six months.
8. Candidate should not allergic to local anesthetic eye drops.

ICL surgical procedure

- The area around the eye will be cleaned and a sterile drape is applied around the eyes
- Then doctor applies aesthetic drops to your eye to numb it.
- Eyelids holders are used to keeping your eyelids open and prevent you from blinking.
- The surgeon makes two tiny micro incisions at the base of the cornea.
- Through the incisions, he injects the lens into the eye. The lens is positioned behind the iris and in front of the natural lens.
- A gel-like substance is placed in your eye, to keep your eye safe while the lens is being positioned.
- After the positioning of the lens, the gel is removed from the eye.
- The surgeon then applies eye drops to your eye to prevent inflammation and infection.

Pre-Surgery and Post-Surgery Guidelines for ICL surgery

Patients need to avoid wearing contact lenses at least 4 weeks prior to the evaluation of your eyes for ICL surgery. On the day of the procedure:

- Avoid applying any makeup over the face especially around the eyes before and after the procedure.
- Stable Vital Sign such as heart rate and Blood Pressure
- Stable Blood Glucose Level
- Start using the eye drops (antibiotics) before 2-3 day of the procedure if prescribed by the surgeon.
- Be cool and calm before the procedure.

After the main ICL surgery you need to:

- Do not rub the eyes
- Avoid exposure to sunlight
- Wear sunglasses
- Do not lift heavy objects.
- Do not drive the car at least for 2-3 day or your doctor not allowed
- Stop sexual life for a week.
- Avoid playing with children since the chance to get an injury to eyes.
- Avoid alcohol and smoking
- Avoid swimming and taking a hot bath
- Avoid using eye makeup for at least 2 weeks after the surgery.
- Apply the eye drops as per the doctor prescription.
- Protect your eyes when you are sleeping through a protective device.
- Meet the doctor immediately if complaints of pain in eyes, loss of vision and any irritation in eyes.
- Visit the doctor for follow up as per recommended.

Advantage of ICL

- The patient will go home at the same time
- Used for all types of refractive error
- It corrects all the level of power
- High definition vision is achieved
- Reversible Procedure
- Not Visible through outside
- Recovery is Fast
- No suturing is required

Table no 01: Complications of ICl Surgery

Vision is corrected more than intended	Vision is not corrected properly
Presbyopia	Risk of infection
Increased eye pressure	Visual Disturbance & Diplopia
Dislocation of ICL	Loss of Vitreous fluid
The opacity of the lens	Injury to the crystalline lens
Corneal Swelling	Detachment of retina

Conclusion

ICL correct the vision in the same way that external contact lens does, except ICl surgically placed inside the eyes, where it permanently improves the vision without removing of the natural lens of the eyes. It is suitable for those who are contraindicated for Lasik surgery and use for all types of refractive errors. It is a reversible, invisible, provide a high quality of vision and proven track record.

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