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*Case Note*

# Explantation of damaged foldable acrylic lens with implantation of foldable intraocular lens without enlarging incision

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**Abstract**

Phacoemulsification with foldable intraocular lens (IOL) implantation has several advantages because of smaller incision and sutureless technique. The visual recovery is usually fast and any surgically induced astigmatism can be kept at lowest. With increased number of trained phaco surgeons in Nepal, more phaco surgeries with foldable lens implantation are being done. Main purpose of this article is to share our experience with ophthalmic surgeons about the technique of explantation and exchange of foldable hydrophilic acrylic lens with good visual outcome in the post operative period. This article describes a case of damaged intraocular lens within the capsular bag. This was successfully managed by snipping the lens into several pieces and explanting the same lens without enlarging the incision. Explantation of lens was followed by implantation of a new foldable lens with good surgical outcome.

A 65 years old male presented to the OPD of Biratnagar Eye Hospital with a history of painless, progressive, gradual loss of vision in both eyes since last three years and no other significant history. On examination presenting visual acuity was 6/60 improving to 6/24 with correction. Eye lids, conjunctiva, cornea, iris and pupil were normal. Lens showed nuclear sclerosis 2 + and posterior subcapsular cataract 2 +. Optic disc and macula were normal. Both eyes had similar findings. After detailed evaluation patient was planned for phacoemulsification surgery with implantation of foldable lens in right eye.

***Surgical Procedure:*** The patient was prepared with a retrobulbar injection of Lignocaine Hydrochloride 2% with Adrenaline1:100,000 concentrations. Fornix based conjuctival flap was made and bleeding vessels were cauterized. Temporal scleral incision (2.5 mm in size) was made about one and half millimeters posterior to the surgical limbus. After preparing a sclerocorneal tunnel the anterior chamber was entered with a diamond keratome. The anterior chamber was filled with 2% Hydroxy propyl methyl cellulose. Continuous circular capsulorrhexis was made with utrata forcep followed by hydrodissection with Ringer lactate solution. Lens nucleus was divided by primary phaco chop procedure followed by emulsification and aspiration. After removal of epinucleus, cortex was removed by bimanual irrigation and aspiration procedure. Viscoelastic and later on Acryflex lens (style AF605, length 12.5 mm, optic diameter 6.0 mm, A constant 118.2 mm and power 20.0 Dioptre) was kept in a cartridge. Cartridge was fit in lens inserter (injector) and lens was injected in the bag slowly. One haptic was injected slowly in the bag followed by optic of lens. Second haptic of the lens was broken at the junction of optic and haptic during the process of injection. It was lying in between the cartridge and plunger of the lens injector.

As the lens was unstable and floating freely inside the bag, the surgeon decided to explant the lens. The intraocular lens was freed from capsular bag and was brought into anterior chamber with a Simsky hook. Holding intra ocular lens with the suture tying forcep it was tried to pull back through the sclerocorneal incision. As the lens optic was of six mm it was not possible to pull it through the smaller incision of 2.5 mm. Lens optic was snipped with long Vannas scissors from periphery of optic to the centre. Five linear cuts were made. Smaller pieces of lens were removed with suture tying forceps without enlarging the incision. Another foldable acrylic lens of measured power and design was placed in the lens cartridge and then injected inside the bag.

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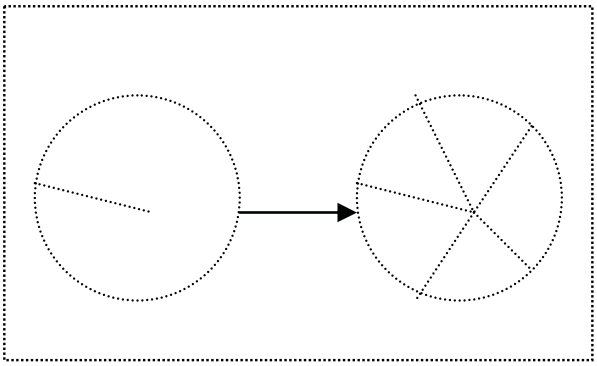

**Fig1:** Five linear cuts were made from periphery of lens to centre of optics.

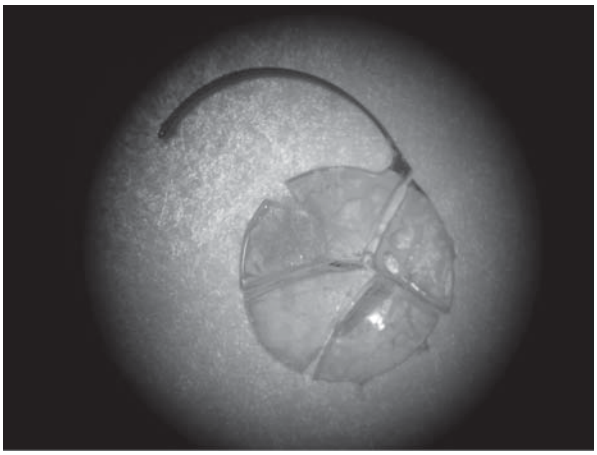

**Fig 3:** Acrylic lens after making cuts

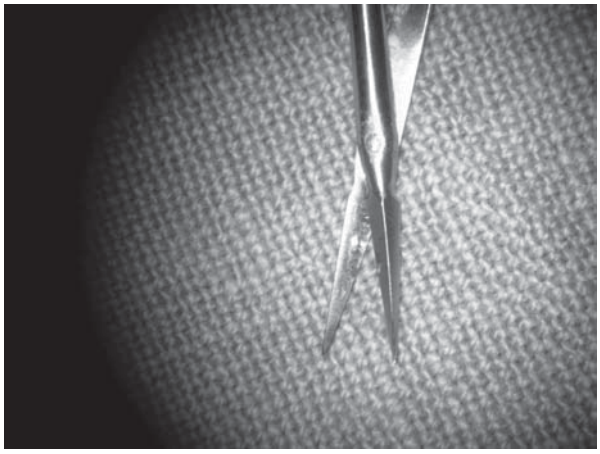

**Fig 2:** Long Vannas scissors

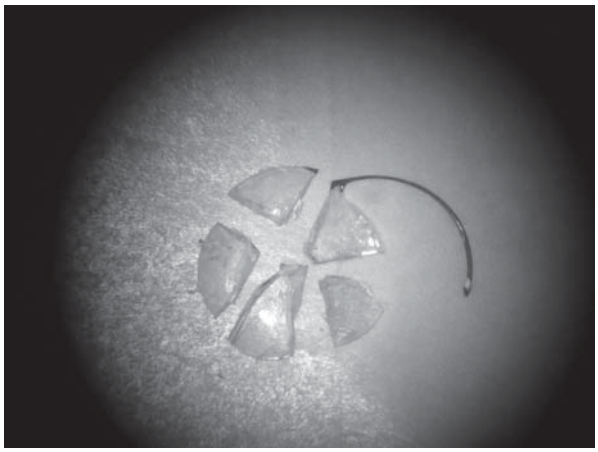

**Fig 4:** Acrylic lens pieces separated after making cuts

**Discussion**

Foldable lenses can be implanted with forceps (holder and folder) or injectors. Foldable hydrophilic lens are easily inserted inside the capsular bag with the help of cartridge and injector. Cartridges are filled up with viscoelastics and lens is inserted in it. Lens is injected in the bag slowly and later rotated inside the capsular bag. Damage to lens optics and haptics during insertion requires explantation of lens and implantation of another lens. For foldable lens, dislocation/decentration, incorrect lens power, IOL calcification, and glare/ optical aberrations were the most common reasons for removals and replacements with other IOLs[1,2,3,4].

In general common causes of lens explantation are pseudophakic bullous keratopathy, chronic uveitis, secondary glaucoma, suppurative uveitis and cystoid macular edema[5]. Color vision disturbance, chronic postoperative endophthalmitis and late opacification of lens are some causes for late removals of IOLs[1,2,3,4]. Any faulty placement of the lens in the cartridge, inappropriate viscoelastic agents, loose piston of the injector and irregular edges at the tip of cartridge affect the lens injection and can damage the lens[6]. Damage can occur in the optics of lens or haptics may get broken. Explantation of lens can be done by enlarging the size of the incision or by dividing the lens in several pieces and removing them through smaller incision without enlarging the size of the incision. Enlargement of the incision induces increased astigmatism in postoperative period.

Explantation after division of the lens into several pieces can be done through a smaller incision. Division of the lens in anterior chamber requires filling up of the anterior chamber with viscoelastics. Viscoelastics should be injected behind the lens to lift it at the level of iris. Vannas scissors needs to be sharp to cut the acrylic lens. Several snips need to be made from periphery of the lens to the centre. Lens optics are pulled with lens holding forceps and separated from each other through

two side port incision on cornea. Lens pieces are pulled out from the original size of the sclerocorneal 2.5 mm incision without enlargement. Preoperative fracture of lens haptics with ND-YAG (neodymium-doped yttrium aluminium garnet) laser, bisection technique, crisscross lensotomy and trisection techniques are some other methods described for the removal of foldable intraocular lenses[7, 8, 9, 10, 11, 12].

In conclusion foldable intraocular lens explantation is a challenging procedure. This is first reported case of foldable lens explantation in Nepal. Five snips over the lens optic with sharp cutting long Vannas scissors, separation of lens optic and pulling of lens optic through original size of incision followed by implantation of foldable intraocular lens can easily be done to replace the damaged intraocular lens. This technique does not require enlargement of the incision size.

**References**


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