

Intraocular Lens Implantation in Anterior Megalophthalmos: A Case Report

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Abstract

We report a 28-year-old woman with monocular diplopia and a previous history of a successful phacoemulsification and posterior chamber intraocular lens implantation performed 2 years ago. Slit lamp examination revealed anterior megalophthalmos. Intraocular surgery in the setting of anterior megalophthalmos can be quite challenging due to miosis, zonular weakness and lens subluxation. We describe a new method of posterior chamber lens implantation with posterior capsulorhexis and IOL haptic capture within posterior capsule and anterior hyaloid face, in order to prevent IOL subluxation in patients with anterior megalophthalmos.

Keywords: Intraocular surgery, Anterior Megalophthalmos, Megalocornea

Introduction

Megalocornea and anterior megalophthalmos, sometimes referred to as the same disorder, are 2 distinct entities [1]. Anterior megalophthalmos is characterized by megalocornea associated with a very broad anterior chamber and ciliary ring elongation. It is also known as x-liked megalocornea. It is accompanied by the early development of cataracts, zonular anomalies and rarely vitreoretinal disorders [2]. Cataract surgery in anterior megalophthalmos can be quite challenging because of the very deep anterior chamber, large capsular bag and loose lens-zonule complex. These features affect the surgical technique, making cataract extraction and IOL implantation a challenge. The IOL can decenter within larger than normal capsular bag [3]. Different methods have been described for cataract surgery and intraocular lens implantation in these patients with variable success rates [4-6]. To the best of our knowledge, this is the first reported case of posterior capsular capture of intraocular lens.

Case report

A 28 - year - old woman was referred to our center with a complaint of monocular diplopia and decreased vision in her left eye. She has had a successful bilateral cataract surgery with posterior capsule intraocular lens implantation (PC-IOL) 2 years ago in another center. Her visual acuity in the left eye was 20/400. Slit lamp examination revealed corneal diameter of 14.5 mm in both eyes. Corneal endothelium had pigment clump in both eyes (Krukenberg's spindle). Ac was very deep and iris had hypoplasia in both eyes. Right eye had a centered PC-IOL with a minimal tilt from center (Figure 1). In the left eye PC-IOL was subluxated inferiorly in the bag. Fundus and retinal examination was normal. Afferent pupillary dilatation was not found. Intraocular pressure (IOP) by Goldmann applanation tonometry was 14 mmHg in the right eye and 15 mmHg in the left eye. IOL power calculation performed with IOL master.

After a retrobulbar anesthesia with lidocain, preparation and draping performed. A 6.5 mm limbal incision made, pupil dilated and subluxated IOL extracted by the use of a forceps. Posterior curvilinear capsulorhexis performed with capsular forceps (diameter of 5.00 mm). Anterior vitrectomy performed and a tripiece IOL (Alcon Inc.) with a power of +26.5 implanted into the bag. IOL optic (with an optic diameter of 6.00 mm and total diameter of 13.00 mm) displaced posteriorly into vitreous cavity. IOL optic captured within posterior capsulorhexis rim. IOL haptics remained in the bag maintaining IOL stability. Viscosurgical material washed out of anterior chamber and corneal incision sutured with nonabsorbable sutures (Nylon 10.0).

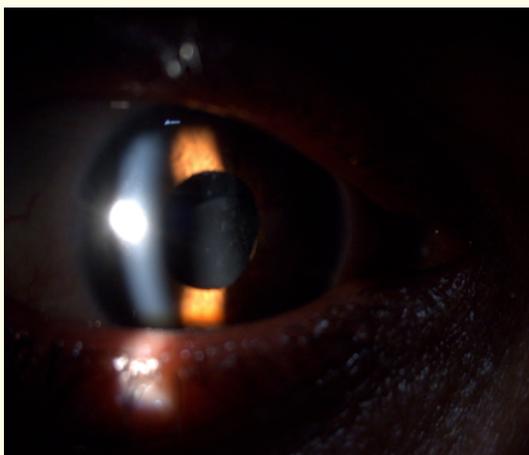


Figure 1: Preoperative photo slitlamp photograph of the right eye. (Permission by the patient).

In a one year follow-up period, no complication observed. IOP was within a normal range. IOL was well centered. Distance corrected visual acuity was 8/10 of Snellen chart. Patient's refraction was $+1.00 \times -1.25^* 90$ after removing all sutures (Figure 2).



Figure 2: Postoperative photo slitlamp of the patient.

Discussion

Cataract surgery is a challenge for even an experienced surgeon. Routine IOLs available have a small optic size to be suited in the capsular bag.

Up to now different methods and IOLs have been advocated in order to have a successful outcome and prevent later subluxation of IOL.

Arun K. Jain and N. Nawani describe phacoemulsification and posterior chamber IOL implantation with anterior IOL optic capture within anterior capsulorhexis. This technique may cause a great deal of optical aberration due to an exposed IOL optic. Also, it can cause pupil motility restriction. Our method imposes no intervention on pupil and iris sphincter.

Marques Vaz and Osher RH [4] report special custom-made 3-piece IOLs in patients with megalophthalmos. IOLs were stable post-operatively but preparing such IOLs for these patients can be challenging both for patient and factory. We use a commercially available routine 3-piece IOL with no problem in preparing the IOL.

To our knowledge this is a first report of an IOL implantation in the capsular bag with posterior capsular capture of IOL optic. It has a minimal risk of endothelial decompensation caused by anterior chamber IOLs. This method does not manipulate pupil causing sphincter problems. IOL stability is very good postoperatively.

Our study is performed only in one case so a large scale study is needed to improve its effectiveness and safety. Our operation is not involved cataract extraction and IOL implantation at the same time, combining the 2 procedure may reveal additional results.

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