

# Aniridia rings implantation for treatment of congenital aniridia combined with cataract surgery: a case report

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## Abstract

• We describe the successful treatment in a patient with bilateral congenital aniridia and cataract by insertion of capsular tension rings and IOL.

• **KEYWORDS:** congenital aniridia; aniridia ring

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## INTRODUCTION

Congenital aniridia is usually accompanied by cataract; these patients always suffer from severe glare and decreased visual acuity. Various methods have been used to overcome the disabling effects, including eyelid surgery, colored contact lens, corneal tattooing<sup>[1]</sup>, and implantation of artificial irides<sup>[2,3]</sup>.

## CASE REPORT

An 18-year-old male was referred for intolerable glare and low visual acuity. On examination, the uncorrected visual acuity (UCVA) of both eyes was hand motions. Examination on both eyes revealed total iris defect and opaque lens (Figure 1). Although, the cataract limited the view, examination of the fundus revealed a flat retina. The intraocular pressure (IOP) was normal in each eye.

After obtaining informed consent from the patient, a surgical treatment for correcting the aniridia was chosen. The eye was draped after skin disinfection. An eyelid retractor was inserted. The capsulorrhexis was completed and the cataract was removed phacoemulsification, 2 aniridia rings (Morcher Type, Morcher GmbH Company, Germany) were implanted

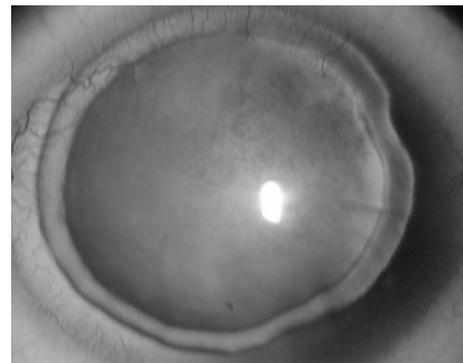


Figure 1 Opaque cataract in an aniridic eye



Figure 2 Insertion of 2 Morcher type 50C rings

in the capsular bag without enlarging the small incision, and the 2 rings were rotated until the fins interdigitate to form a confluent iris diaphragm (Figure 2). Then an additional foldable lens was inserted (Figure 3).

During the follow-up, a centered IOL within the bag and perfectly aligned aniridia rings can be observed (Figure 4). Best-corrected visual acuity improved to 20/200, Glare subjectively improved in both eyes. Mild postoperative anterior uveitis was observed, and the intraocular pressure was normal.

## DISCUSSION

The Congenital, traumatic, and iatrogenic problems will result in partial or total iris defect. As it is known, the iris functions include: cosmetic function, regulate the amount of light, increase depth of focus, and limit spherical and chromatic aberrations. So, the patients with iris defect will suffer from optical symptoms: decreased visual acuity,

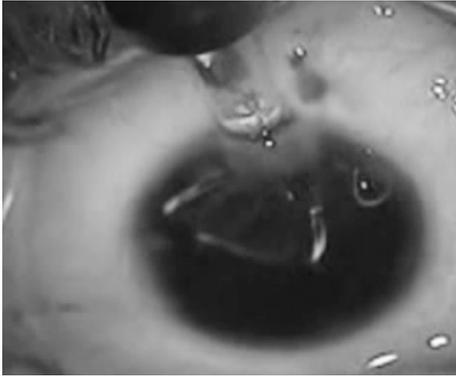


Figure 3 Insertion of a foldable lens

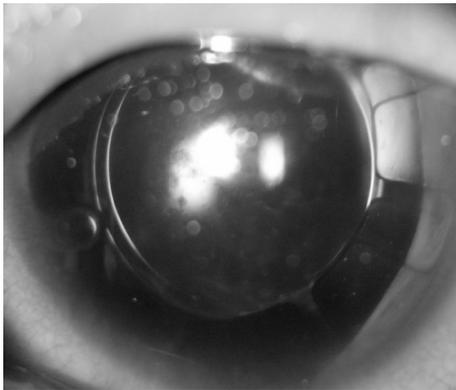


Figure 4 Slitlamp appearance of aniridia rings and IOL in the capsular bag

photophobia, glare, and poor cosmetic appearance. In order to help the patients to overcome these optical symptoms, ophthalmologists have tried many methods. In past years, many extraocular methods have been tried with not good outcome. In recent years, with the development of surgical technology and intraocular devices, outcome of procedures

to overcome this problem have been improved.

The advantages of implantation of aniridia rings and intraocular lens include aniridia rings can be introduced without having to enlarge the small incision in the cataract procedures<sup>[4]</sup>, without any sutures, and decrease the contact area with the ciliary zone and minimizing the risk for postoperative inflammation and IOP rise. Aniridia rings also provide a good pupil size postoperatively for retinal examination. However, this method has some disadvantages including these devices are brittle and susceptible to fracture. It is difficult to align within the eye in order to produce a full iris diaphragm<sup>[5]</sup>. The capsular bag can become somewhat crowded after two or three devices have been inserted.

In patients with iris deficiency, implantation of aniridia rings and intraocular lens following cataract surgery appears to be safe and effective in reducing glare and improving visual outcomes. However, additional designs have to achieve to customize pupil size, customize iris color, and improved flexibility of the material.

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