

# Clear Lens Phacoemulsification with Implantation of Intraocular Lens in a Case of Bilateral Anterior Lenticonus Due to Alport Syndrome

Maryam Jabbar<sup>1</sup>, Faisal Rashid<sup>2</sup>, Naseer Fatima<sup>3</sup>, Hafiz Masood Ahmad<sup>4</sup>  
<sup>1,3,4</sup> District Headquarter Hospital, Okara, <sup>2</sup> Services Hospital, Lahore

## ABSTRACT

Alport Syndrome (AS) is a rare disorder of basement membrane, which is progressive, hereditary and presents as nephritis associated with sensorineural hearing loss, and ocular abnormalities including anterior lenticonus. Anterior lenticonus secondary to Alport syndrome is difficult to correct, however clear lens phacoemulsification is a successful and safe treatment option for the anterior lenticonus associated with Alport Syndrome. We report visual status of a young patient with Alport Syndrome and bilateral anterior lenticonus, after clear lens phacoemulsification. A 17-year-old male with bilateral anterior lenticonus presented with decreased visual acuity. Systemic evaluation revealed Alport syndrome. Clear lens phacoemulsification and foldable acrylic intraocular lens implantation was done. Visual acuity improved after surgery. There were no notable complications. Clear lens phacoemulsification and foldable lens implantation are effective and safe procedures for individuals with this visual disorder.

**Key Words:** Anterior lenticonus, Alport Syndrome, Phacoemulsification.

**How to Cite this Article:** Jabbar M, Rashid F, Fatima N, Ahmad HM. Clear Lens Phacoemulsification with Implantation of Intraocular Lens in a Case of Bilateral Anterior Lenticonus Due to Alport Syndrome. Pak J Ophthalmol. 2023, **39** (1): 72-74.

**Doi:** 10.36351/pjo.v39i1.1402

*Correspondence: Faisal Rashid  
 Services Hospital, Lahore  
 Email: optometristfaisalrasheed@gmail.com*

*Received: April 12, 2022  
 Accepted: December 18, 2022*

## INTRODUCTION

Alport syndrome is primarily X-linked (85%). However, it can also be autosomal recessive (10%) or autosomal dominant (5%).<sup>1</sup> Dot-and-fleck retinopathy, posterior polymorphous corneal dystrophy, anterior lenticonus (AL), cataract, posterior lenticonus and retinal detachment are common ocular manifestations.<sup>2</sup> Prevalence of AS is one case per 5000 people, with male predominance.<sup>3</sup>

A case of bilateral anterior lenticonus related to Alport Syndrome is reported, with successful surgical management comprising of clear lens phacoemulsification and implantation of a foldable acrylic intraocular lens in the bag.

## CASE REPORT

A 17-year-old male presented with a three-year old history of gradual deterioration of vision in both eyes. He denied pain, photophobia, ocular redness and discharge. His ocular history revealed frequent change of glasses for three years and past medical history included bilateral hearing loss for which he had been using hearing aid. He had renal transplant for renal failure secondary to nephritis of unknown etiology. There was no history of any current medications. Family history was unremarkable. The patient had no known allergies to drugs. Social history to tobacco was also negative.

On ocular examination best-corrected distance visual acuity was 6/60 OD and 6/36 OS. Objective refraction was done using auto-refractometer which showed error of -2.50/-5.75 × 30 OD and -6.00/-3.00 × 140 OS. Extraocular movements were full and the patient was orthophoric with cover test at distance and near. There was no relative afferent pupillary defect OU. The intraocular pressures were 14 mmHg

and 15 mmHg in right and left eyes respectively. Keratometric reading of right eye was 42.13×180 and 43.63 × 90 (astigmatism -1.50 × 180) and that of left eye was 42.00 × 180 and 43.00 × 90 (astigmatism – 1.00 × 180).

Slit lamp examination revealed normal structures except bilateral anterior lenticonus. Under topical anesthesia (0.5% Proparacaine hydrochloride), right eye underwent clear lens extraction with intraocular lens (IOL) implantation in capsular bag in April 2021. Capsule was polished thoroughly to avoid posterior capsular opacity. Hydrophobic, foldable acrylic IOL was implanted. Post operatively the patient was given Moxifloxacin and Dexamethasone eye drops, every 2 hours for one week and then 4 hourly for a month. Best corrected visual acuity was 6/6 with -0.25/-0.75 × 10 after one week.

The left eye was operated in May 2021 following similar protocol as for the right eye. After one week, best corrected visual acuity in the left eye was 6/6 with 0.50 x 110. No evidence of intraocular inflammation was reported. The patient was instructed to follow-up annually for routine examination.

## DISCUSSION

Two cases of anterior lenticonus secondary to Alport Syndrome, who underwent clear lens phacoemulsification and foldable intraocular lens implantation, were reported by Aslanzadeh et al.<sup>4</sup> A direct connection between capsular fragility and anterior lenticonus is also described.<sup>5</sup> Gupta et al. described four patients of Alport-syndrome (7 eyes) who underwent clear lens extraction with IOL implantation.<sup>6</sup> In one individual, the anterior lens capsule broke spontaneously due to capsule fragility.

In 2014, Sonarkhan et al. reported bilateral phacoemulsification and implantation of foldable intraocular lens in 29 years old woman with anterior lenticonus.<sup>7</sup> They reported uncomplicated surgery with excellent visual prognosis.

Eleven cases of phacoemulsification and foldable intraocular lens implantation were reported by Zare et al with favourable results.<sup>8</sup> Seymenoğlu et al, has also described successful treatment of anterior lenticonus with phacoemulsification and intraocular lens implantation. They reported fragile lens capsule in these cases and advised caution while implanting intraocular lens in capsular bag.<sup>9</sup>

There was no complication during and after surgery in our case and there was rapid visual rehabilitation after the procedure.

**Conflict of Interest:** Authors declared no conflict of interest.

## REFERENCES

1. **Nozu K, Nakanishi K, Abe Y, Udagawa T, Okada S, Okamoto T, Kaito H, Kanemoto K, Kobayashi A, Tanaka E, Tanaka K.** A review of clinical characteristics and genetic backgrounds in Alport syndrome. *Clin Exp Nephrol.* 2019; **23** (2): 158-168.
2. **Artuso R, Fallerini C, Dosa L, Scianti F, Clementi M, Garosi G, Massella L, Epistolato MC, Mancini R, Mari F, Longo I.** Advances in Alport syndrome diagnosis using next-generation sequencing. *European J Human Genetics,* 2012; **20** (1): 50-57.
3. **Savige J, Sheth S, Leys A, Nicholson A, Mack HG, Colville D.** Ocular features in Alport syndrome: pathogenesis and clinical significance. *Clin J Am Soc Nephrol.* 2015; **10** (4): 703-709.
4. **Aslanzadeh GA, Gharabaghi D, Naderi N.** Clear lens phacoemulsification in the anterior lenticonus due to Alport Syndrome: two case reports. *J Med Case Rep.* 2008; **2** (1): 1-3.
5. **Hyuk Choi J, Sool Na K, Hee Bae S, Hwan Roh G.** Anterior lens capsule abnormalities in Alport syndrome. *Korean J Ophthalmol.* 2005; **19** (1): 84-89.
6. **Gupta A, Babu KR, Srinivasan R, Mohanty D.** Clear lens extraction in Alport syndrome with combined anterior and posterior lenticonus or ruptured anterior lens capsule. *J Cataract Refract Surg.* 2011; **37** (11): 2075-2078.
7. **Sonarkhan S, Ramappa M, Chaurasia S, Mulay K.** Case Report: Bilateral anterior lenticonus in a case of Alport syndrome: a clinical and histopathological correlation after successful clear lens extraction. *BMJ Case Reports,* 2014; 2014.
8. **Zare MA, Rajabi MT, Nili-Ahmadabadi M, Oskouee SJ, Moghimi S.** Phacoemulsification and intraocular lens implantation in Alport syndrome with anterior lenticonus. *J Cat & Ref Surg* 2007; **33** (6): 1127-1130.
9. **Seymenoğlu G, Baser EF.** Ocular manifestations and surgical results in patients with Alport syndrome. *J Cataract Refract Surg.* 2009; **35** (7): 1302-1306.

### **Authors' Designation and Contribution**

Maryam Jabbar; Optometrist: *Concepts, Design, Literature search, Data acquisition, Data analysis, Manuscript preparation.*

Faisal Rashid; Senior Optometrist: *Concepts, Design, Statistical analysis, Manuscript preparation, Manuscript editing, Manuscript review.*

Naseer Fatima; House Officer: *Data acquisition, Data analysis, Statistical analysis, Manuscript preparation.*

Hafiz Masood Ahmad; Consultant Ophthalmologist: *Design, Literature search, Data acquisition, Data analysis, Manuscript review.*

