

**Choroid Effusion After Phacoemulsification in High Hypermetropic Patient**

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**Abstract**

In this study, a common choroidal effusion developed after the second day on the patient has high hypermetropia after uncomplicated phaco surgery was investigated.

A 40 year old female patient with the complaint of low vision and she had been operated for LASIK 15 years ago, nevertheless bilateral hypermetropia continues (right: +8.00 left: +7.00) has applied to our clinic. Bilateral posterior subcapsular cataract was detected and phacoemulsification surgery was planned. There was not any risk factor at the preoperative measurements. The patient had not been previously diagnosed with nanophthalmos. On the first day after uneventful cataract operation, visual acuity was seen at the level of hand movement. Two common choroidal effusion areas at the posterior pole and lower temporal lobe were diagnosed by B scan USG and optical coherens tomography (OCT).

Because of this complication the patient was examined closely and nanophthalmos was diagnosed. The choroid effusion was attributed as a complication of nanophthalmos. Resolution of the choroid effusion were observed after 1 week follow-up with systemic and topical steroid treatment, antiglaucomatose and antiinflammation ointments and also with cycloplegic dilatation. Follow-up visits was continued for 12 weeks and she also has been recommended to continue to her medication. In her last visit, choroidal hemorrhage was completely drained and improvement of vision was observed. Choroidal hemorrhage due to high hypermetropia, and nanophthalmos and the possibility of choroidal effusion should be kept in mind.

**Key words:** Choroid effusion, High hypermetropia, Phacoemulsification

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**Introduction**

Nanophthalmos is a part of the clinical spectrum of microphthalmos (6). The small eye without ocular malformations, which is typically considered nanophthalmos describes the

clinical features include thickened sclera (greater than 1.7 mm determined by B-scan echography), a normal to large lens with a high lens:eye volume ratio, a shallow anterior chamber, and a shorter than average total axial length usually less than 21.0 mm)(6). These 4 basic clinical features can

account for glaucoma and retinal complications in these eyes.

There are no typical findings in eyes with nanophthalmos. However the fundus of these eyes shows crowded optical discs and tortuous vessels. Morphometric features of the small eyes predispose to complications such as narrow-angle glaucoma and uveal effusion due to the posterior uveoscleral outflow (6). Some interfamilial clinical heterogeneity is seen to affect, at a minimum, corneal curvature and papillomacular folds (3-5). Cataract surgery in eyes with nanophthalmos is associated with a high risk for vision threatening complications. Performing a simultaneous prophylactic sclerostomy with cataract surgery reduces complication rates, it is prudent to consider resections to enhance posterior uveoscleral flow (10).

Although scleral thickness is not routinely measured clinically, the variation in scleral thickness of the globe is known. The sclera is normally thickest posteriorly and measures approximately 1.0 mm in an eye of average size. It is typical that the

sclera thins anteriorly and is approximately 0.6 mm at the equator and is thinnest (0.3 mm) posterior to the rectus muscle insertions (7). An eye was determined to have increased retinal-choroidal-scleral thickening if the measurement on echography was greater than 1.7 mm (6).

### Case Presentation

Our case was a 40-year-old woman who underwent lasik operation 15 years ago and had a persistent high hypermetropia (right: +8.00 left: +7.00)–She has applied to our clinic with persistent loss of vision for a year. A Bilateral posterior polar cataract was diagnosed. In the Snellen chart, right vision was 0.4 and left visual acuity was 0.4. Her dilated fundus examination was normal. Corneal thickness in right and left eye was measured 497 nm and 496 nm respectively and intraocular pressure was normal in both eyes. Anterior chamber depth were 3.17 mm in the right eye and 3.26 mm in the left eye ( Figure 1).

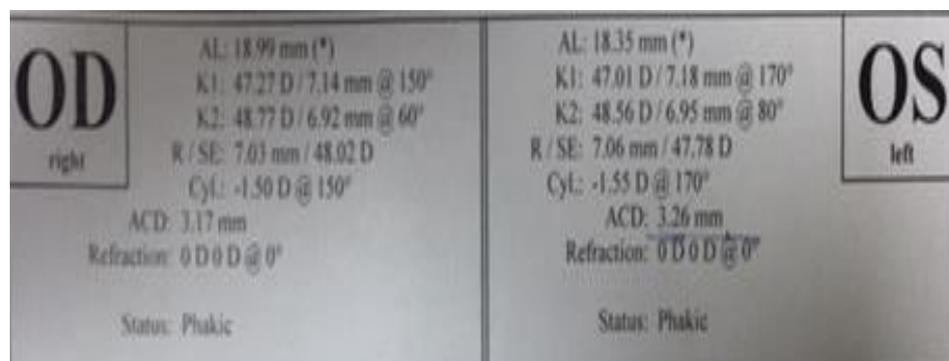


Figure 1. Ocular biometry findings

Both axial length was shorter than average (18.99 mm/18.35 mm). There was no

pathology on the patient's angle examination. OCT glaucoma test was

observed normal in both eyes. Small optic disc consistent with high hypermetropia was detected bilaterally. Under topical anesthesia, standard cataract surgery was completed with no complications. After intraocular lens implantation, anterior chamber opacification and narrowing were occurred and this complication blocked to

see the details. 200cc mannitol was given postoperatively due to high intraocular pressure. On the first day after uneventful phaco operation, visual acuity was seen at the level of hand movement.

Two common choroidal effusion diagnosed at the posterior pole and temporal retina by B-scan USG and OCT ( Figure 2-3).



Figure 2. Ocular B scan USG view on the first postoperative day

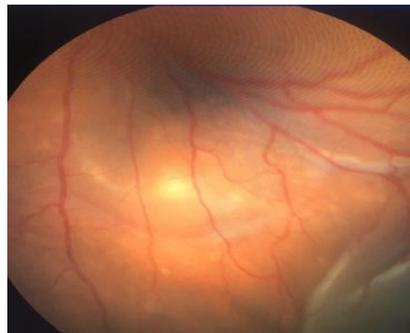


Figure 3. Fundus photograph of choroidal hemorrhage on the first postoperative day

Drainage of choroidal hemorrhage was observed after 1 week follow-up with systemic and topical steroid treatment and also with cycloplegic dilatation. Vision improvement was observed within weeks. Patient follow up visits continue. Her visual acuity was 0.4 on snellen chart at the sixth week after surgery and macular folds still

presents at the fundus examination. She also has been recommended to continue to her medication. The choroidal effusion was regressed after 6 week follow up and scleral thickness has measured 2.7 mm, thicker than average and similar to nanophthalmos ( Figure 4).



Figure 4. Scleral thickness measurement

Choroidal hemorrhage and effusion due to high hypermetropia and nanophthalmos should be kept in mind.

### Discussion

In the current study, the procedures performed by specifying the characteristics of the patient, who are seen very rarely in the population are explained. The results and complications of cataract surgery in patients with nanophthalmos and high hypermetropia was evaluated.

The fact that the patient has the following characteristics; She had a persistent high hypermetropia (right: +8.00 left: +7.00). The axial length was 18.35 mm in the left eye and 18.99 mm in the right eye. Her scleral thickness was measured 2.7 mm in the left eye.

The narrowing of the anterior chamber and the thickening of the sclera make the eye vulnerable to glaucoma and retinal complications probably due to the resistance to the posterior uveascleral outflow. These complications are of acute angle closure include glaucoma, retinal detachment or coexistence of uveal effusion syndrome, cystoid maculopathy, and malignant glaucoma (10). Because the

clinical spectrum of the small eye is so wide, it is difficult to remove it from normal eyes and it requires additional eye measurements. Although scleral thickness is not routinely measured and there is no typical fundus finding of nanophthalmus we can be alert on hyperopia with short axial length. It will be safer to measure the scleral thickness with echography before surgery.

Especially in hypermetropic patients prior to phacoemulsification surgery, corneal curvature, corneal diameter pachymetry, anterior chamber depth, lens thickness, scleral thickness, depth of vitreous cavity depth measurements will help to detect nanophthalmos and other microphthalmia. Precautions to be taken before surgery will reduce the possibility of complications.

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