CLINICAL SCIENCES

Aphakic Glaucoma After Congenital Cataract Surgery

Teresa C. Chen, MD; David S. Walton, MD; Lini S. Bhatia, MD

Objective: To describe the largest series of patients who developed aphakic glaucoma after lensectomy for congenital cataracts.

Methods: A retrospective review was performed of all patients seen by a pediatric glaucoma specialist between October 1, 1970, and November 30, 2002. Patients with intraocular pressures greater than 25 mm Hg after lensectomy were studied. Patients with either conditions independently associated with glaucoma or any signs of glaucoma before lensectomy were excluded.

Results: We studied 170 eyes of 117 patients. The mean±SD follow-up period was 8.6±7.6 years. The most common cataract types were complete (40.8%) and nuclear (22.5%). For the lensectomies, 103 eyes underwent modern vitrectomy techniques, and 10 underwent older techniques. Lensectomies were performed in 80.6% of eyes before age 1 year. Onset of glaucoma after lensectomy was by 1 year in 37.1% of eyes, by 6 years in 75.9%, and by 33 years in 100%. Of eyes that had gonioscopy, 93.9% had open angles. Glaucoma surgery was needed in 57.1% of eyes. The median final visual acuity was 20/400.

Conclusions: Most cases of aphakic glaucoma are of the open-angle type. Various risk factors are suggested, and the prognosis is guarded. Lifelong follow-up is needed to screen for glaucoma.

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Glauccoma continues to be one of the most common complications of congenital cataract surgery and ranges from 0% to 32%. The incidence of aphakic glaucoma also seems to increase with longer follow-up. In patients who receive follow-up for longer than 5 years, the incidence of glaucoma has been reported to be as high as 41%.

Although it was commonly believed that newer automated techniques would decrease the incidence of glaucoma, the incidence after automated lensectomy and vitrectomy is still relatively high and unchanged, which is similar to the incidence of 5.5% to 7.0% in patients who underwent older needleling and aspiration procedures. However, with the introduction of vitrectomy instruments for childhood cataract surgery in 1975, angle-closure glaucoma with pupillary block after lensectomy has become less common. Now, most cases of glaucoma after pediatric lensectomy are of the later-onset open-angle type, accounting for 75.0% to 93.8% of glaucoma cases after lensectomy.

We describe the largest series in the literature of patients with aphakic glaucoma to better define the risk factors, clinical course, and prognosis of this disease.

Methods

A retrospective medical record review was performed for all patients seen by a pediatric glaucoma specialist (D.S.W.) between October 1, 1970, and November 30, 2002. Patients were included if they had repeated intraocular pressures (IOPs) greater than 25 mm Hg after congenital cataract surgery. Goldmann or Perkins applanation tonometry was used. Cataracts were defined as congenital if they were identified in the first 6 months of life, were dominantly inherited, or were of the lamellar type. Patients were included if they underwent lensectomy before age 20 years.

Inclusion criteria consisted of having at least 1 month of follow-up after aphakic glaucoma was diagnosed. Patients were excluded if they had a history of trauma, intraocular neoplasm, radiation therapy, anterior uveitis, anterior segment dysgenesis, Stickler syndrome, Lowe syndrome, maternal rubella...
syndrome, or trisomy 13. Patients with a history of corticosteroid use before lensectomy or a history of maternal corticosteroid use, those with signs of congenital glaucoma before lensectomy, and those with retinal detachment or vitreous hemorrhage before lensectomy were also excluded.

Information included a complete history and eye examination. Also recorded were the intraoperative and postoperative courses. Results are expressed as mean ± SD.

**RESULTS**

One hundred seventy eyes of 117 patients with aphakic glaucoma met the inclusion and exclusion criteria. There were 55 males and 62 females. Mean ± SD follow-up time was 8.6 ± 7.6 years (range, 1 month to 28 years). Patient ages at the last follow-up visit ranged from 5 months to 63 years.

Fifty-three patients had bilateral aphakic glaucoma, 30 had bilateral lensectomy but aphakic glaucoma in only 1 eye, and 34 had unilateral lensectomy with subsequent aphakic glaucoma. No patient with unilateral lensectomy developed glaucoma in the other eye. In patients in whom cataract type was recorded (71 eyes), the most common type was the complete cataract (Table 1).

Thirty-nine (22.9%) of 170 eyes were operated on by D.S.W., and 131 eyes (77.1%) were operated on by other surgeons. Modern vitrectomy instruments were used in 103 eyes (91.2%), whereas older techniques (ie, needling, aspiration, or linear extraction) were used in 10 eyes; the operative techniques used in 57 eyes were unknown.

Fifty-five (53.4%) of 103 eyes underwent lensectomy with primary posterior capsulotomy and anterior vitrectomy. One patient underwent extracapsular cataract extraction with a posterior chamber intraocular lens at age 1 month. The mean ± SD age at the time of lensectomy was 0.7 ± 1.4 years (range, 1 week to 10 years). One hundred thirty-seven (80.6%) of 170 eyes underwent surgery before the patient was aged 1 year (Figure 1).

No intraoperative complications were recorded in any of the eyes. Eighty-five (50.0%) of 170 eyes had complications after lensectomy (Table 2).

Forty-eight (28.2%) of 170 eyes had a family history of congenital cataracts in first-degree relatives. Thirty-eight (79.2%) of these 48 eyes were from 19 patients with bilateral congenital cataracts.

Associated ocular conditions were present in 58 (34.1%) of 170 eyes (Table 3). Associated systemic anomalies were seen in 39 (33.3%) of 117 patients (Table 4). The mean ± SD IOP before lensectomy was 15.2 ± 3.5 mm Hg (range, 5-22 mm Hg) and after the development of aphakic glaucoma was 34.0 ± 7.1 mm Hg (range, 25-50 mm Hg). The mean ± SD corneal diameter before lensectomy was 9.9 ± 1.2 mm (range, 7-13 mm). The mean ± SD axial length by ultrasonography (A scan) before lensectomy was 15.6 ± 2.3 mm (range, 12-21 mm). The mean ± SD birth weight was 3.2 ± 0.8 kg (range, 0.6-4.3 kg).

Aphakic glaucoma developed after lensectomy in 63 (37.1%) of 170 eyes by age 1 year and in 129 (75.9%) by age 6 years (Table 5). The mean ± SD interval that glau-

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**Table 1. Types of Cataracts in 71 Eyes With Aphakic Glaucoma**

<table>
<thead>
<tr>
<th>Type of Cataract</th>
<th>Eyes, No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete</td>
<td>29 (40.8)</td>
</tr>
<tr>
<td>Nuclear</td>
<td>16 (22.5)</td>
</tr>
<tr>
<td>Persistent hyperplastic primary vitreous</td>
<td>9 (12.7)</td>
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<tr>
<td>Lamellar</td>
<td>6 (8.5)</td>
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<tr>
<td>Membranous</td>
<td>4 (5.6)</td>
</tr>
<tr>
<td>Cortical</td>
<td>3 (4.2)</td>
</tr>
<tr>
<td>Anterior polar</td>
<td>2 (2.8)</td>
</tr>
<tr>
<td>Posterior subcapsular</td>
<td>1 (1.4)</td>
</tr>
<tr>
<td>Posterior cortical</td>
<td>1 (1.4)</td>
</tr>
</tbody>
</table>

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**Table 2. Complications in 85 Eyes After Lensectomy**

<table>
<thead>
<tr>
<th>Complication</th>
<th>Eyes, No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pupillary membrane</td>
<td>49 (57.6)</td>
</tr>
<tr>
<td>Residual lens material</td>
<td>15 (17.6)</td>
</tr>
<tr>
<td>Posterior capsule opacification</td>
<td>12 (14.1)</td>
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<tr>
<td>Pupillary block</td>
<td>9 (10.6)</td>
</tr>
<tr>
<td>Posterior synechiae</td>
<td>3 (3.5)</td>
</tr>
<tr>
<td>Vitreous hemorrhage</td>
<td>3 (3.5)</td>
</tr>
<tr>
<td>Retinal detachment</td>
<td>2 (2.4)</td>
</tr>
<tr>
<td>Malignant glaucoma</td>
<td>2 (2.4)</td>
</tr>
<tr>
<td>Severe inflammation</td>
<td>2 (2.4)</td>
</tr>
<tr>
<td>Hyphema</td>
<td>1 (1.2)</td>
</tr>
<tr>
<td>Nonhealing wound</td>
<td>1 (1.2)</td>
</tr>
</tbody>
</table>

*Some eyes had more than 1 complication.

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**Table 3. Associated Ocular Anomalies in 58 Eyes With Aphakic Glaucoma**

<table>
<thead>
<tr>
<th>Ocular Anomaly</th>
<th>Eyes, No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microphthalmos</td>
<td>24 (41.1)</td>
</tr>
<tr>
<td>Esotropia</td>
<td>11 (6.5)</td>
</tr>
<tr>
<td>Persistent hyperplastic primary vitreous</td>
<td>9 (5.3)</td>
</tr>
<tr>
<td>Nasolacrimal duct obstruction</td>
<td>9 (5.3)</td>
</tr>
<tr>
<td>Mixed tropias</td>
<td>7 (4.1)</td>
</tr>
<tr>
<td>Exotropia</td>
<td>5 (2.9)</td>
</tr>
</tbody>
</table>

*Some eyes had more than 1 anomaly.

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**Table 4. Associated Systemic Anomalies in 39 Patients With Aphakic Glaucoma**

<table>
<thead>
<tr>
<th>Anomaly</th>
<th>Patients, No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular</td>
<td>10 (25.6)</td>
</tr>
<tr>
<td>Renal</td>
<td>7 (17.9)</td>
</tr>
<tr>
<td>Congenital renal dysplasia</td>
<td>6 (15.4)</td>
</tr>
<tr>
<td>Osteopenia</td>
<td>6 (15.4)</td>
</tr>
<tr>
<td>Mental retardation</td>
<td>5 (12.8)</td>
</tr>
<tr>
<td>Hypogonadism</td>
<td>6 (15.4)</td>
</tr>
<tr>
<td>Immunologic</td>
<td>2 (5.1)</td>
</tr>
</tbody>
</table>

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**Figure 1. Distribution of patient age at lensectomy.**
coma was diagnosed after lensectomy was 4.0 ± 4.6 years. Open-angle glaucoma was the most common type of aphakic glaucoma. Gonioscopy showed open angles in 139 (93.9%) of the 148 eyes examined. In 74 (50.0%) of the 148 eyes, there was some degree of peripheral anterior synechiae. Some eyes also showed increased pigmentation and a glazed appearance of the trabecular meshwork. Nine (6.1%) of 148 eyes had closed angles. Four eyes had corneal haze, which precluded gonioscopy. The gonioscopy findings of 18 eyes were not known.

After the development of glaucoma, the posterior pole could be seen in 169 eyes. Ninety-four (55.6%) of the 169 eyes showed good vascularization of the optic disc, whereas 58 (34.3%) showed varying degrees of pallor. After the development of aphakic glaucoma, the mean ± SD cup-disc ratio was 0.29 ± 0.13 (range, 0.2-0.99) (Table 6).

Seventy (41.2%) of 170 eyes were operated on for postoperative complications, with the most common operation being pupillary membrane removal in 39 (56%) of 70 eyes (Table 7). Surgical procedures unrelated to postoperative complications were performed in 28 (16.5%) of the 170 eyes. Strabismus surgery was performed in 22 (12.9%) of 170 eyes. In 8 of these 22 eyes, strabismus was present before lensectomy. In the remaining 14 eyes, it is unknown whether the onset of strabismus was before or after cataract surgery. Secondary intraocular lens surgery was performed in 4 eyes, nasolacrimal duct probing in 1 eye, and refractive corneal surgery in 1 eye.

Topical glaucoma medications were applied to 156 (91.8%) of 170 eyes after the onset of glaucoma (Table 8). The initial treatments in the other 14 eyes were either unknown or consisted of systemic medications or surgery. The most common single agent used was a β-blocker.
in 84 (49.4%) of 170 eyes (Table 9). Sixty (35.3%) of 170 eyes needed systemic carbonic anhydrase inhibitor therapy.

Glaucoma surgery was performed in 97 (57.1%) of 170 eyes (Table 10). Sixty-seven (69.1%) of 97 eyes underwent a single procedure, and 30 eyes (30.9%) needed multiple surgical procedures to control IOP. Goniotomies or trabeculotomies were performed in 24 (24.7%) of 97 eyes, with a success rate of 16.0% (ie, IOP ≤ 21 mm Hg, with or without medications, and no need for further surgery). Of the 61 (62.9%) of 97 eyes that underwent trabeculectomy, only 1 was without antimetabolites. Forty-three eyes used mitomycin, and 17 eyes used fluorouracil. Fifteen (24.6%) of these 61 eyes had successful outcomes (ie, IOP ≤ 21 mm Hg, with or without medications, and no need for further surgery).

Cyclodestructive procedures were performed in 21 (21.6%) of 97 eyes and included cyclocryotherapy, diode laser transscleral cyclophotocoagulation, and contact Nd:YAG laser cyclotherapy. The success rate for cyclodestructive procedures was 14.3% (ie, IOP ≤ 21 mm Hg, with or without medications, and no need for further surgery).

At the last follow-up visit, median and mean visual acuities were 20/400 and 20/515, respectively. Visual acuities ranged from 20/25 to no light perception. Figure 2 shows that 10.6% of eyes had visual acuity of 20/25 to 20/40, 23.0% of 20/50 to 20/200, and 66.2% of 20/400 or worse at the last follow-up visit.

**COMMENT**

With modern lensectomy techniques, most cases of aphakic glaucoma are of the open-angle type. Various risk factors are associated with aphakic glaucoma, which has a guarded prognosis. Because glaucoma may not develop for years after lensectomy, lifelong follow-up is needed.

In this study, most cases of aphakic glaucoma after lensectomy for congenital cataracts were of the open-angle type (139 [93.9%] of 148 eyes). This is consistent with the literature, which describes 75.0% to 93.8% of patients with open angles. Although most patients with aphakic glaucoma have open angles, acquired angle changes can be seen in 96% of eyes and are characterized by circumferential forward positioning of the iris to the posterior lens capsule. Of the 61 (62.9%) of 97 eyes that underwent trabeculectomy, only 1 was without antimetabolites. Forty-three eyes used mitomycin, and 17 eyes used fluorouracil. Fifteen (24.6%) of these 61 eyes had successful outcomes (ie, IOP ≤ 21 mm Hg, with or without medications, and no need for further surgery). Of the 61 (62.9%) of 97 eyes that underwent trabeculectomy, only 1 was without antimetabolites. Forty-three eyes used mitomycin, and 17 eyes used fluorouracil. Fifteen (24.6%) of these 61 eyes had successful outcomes (ie, IOP ≤ 21 mm Hg, with or without medications, and no need for further surgery).
terior or middle trabecular meshwork.19 The residual exposed trabecular meshwork is sometimes noted to have scattered pigment deposits,2,15,19,21 white crystalline deposits suggesting residual lens tissue caught in the trabecular meshwork,19 or peripheral anterior synchiae.2,3,19,22

Most cases of aphakic glaucoma develop after lensectomy. The mean±SD time after lensectomy that glaucoma developed in our patients was 4.0±4.6 years (Table 5), compared with other reports of 5.3 to 12.2 years.2,3,5,7,20,23-25 Therefore, buphthalmos, which usually occurs in the first 2 to 3 years of life, is generally not present. The latest time after lensectomy that glaucoma developed in our study was 33 years, compared with the literature’s citing of 4519 to 6526 years. Because it is also difficult to predict which eyes will develop aphakic glaucoma,25 lifetime surveillance for glaucoma after congenital cataract surgery is necessary.13,19

Even after 5 years of follow-up,27 children with congenital cataracts rarely, if ever, develop glaucoma if they do not undergo lensectomy.18,19 This finding is also supported by other researchers who have noted that no patient with bilateral aphakia developed unilateral glaucoma23 and that no patient with unilateral aphakia had bilateral glaucoma.3,23 Our study, however, had 30 patients with bilateral lensectomy but unilateral glaucoma.

The etiology of aphakic glaucoma is still unclear.28,29 Undergoing lensectomy at a young age,1,2,4,7,8,28 especially in the first year of life,2,19,23 may be a risk factor for the development of aphakic glaucoma. Only 1 study3 suggests that it may not be a risk factor. Most of our patients with aphakic glaucoma (80.6%) underwent lensectomy in the first year of life (Figure 1). This is consistent with the 77.0% to 92.9% reported in the literature.2,4,10

It has been suggested that the immaturity of the developing infant’s angle leads to increased susceptibility to secondary surgical trauma.2 Additional contributing factors seen in younger patients undergoing surgery include increased postoperative inflammation, associated congenital ocular anomalies, and increased technical difficulties with their associated increased postoperative complications.2,6,15,18,30 Despite the increased risk of aphakic glaucoma with early surgery, it seems inadvisable to delay surgery solely for fear of aphakic glaucoma.2 The increased risks of early lensectomy must be balanced against the need to decrease the period of visual deprivation.1

Corneal diameters less than 10 mm have also been associated with 88.5% to 94.0%,23,24 of patients with aphakic glaucoma and may be another risk factor.2,23 One study3 with only 8 eyes found no association. Our patients had a mean±SD corneal diameter of 9.9±1.2 mm. Parks et al23 noted that aphakic glaucoma developed in only 2.9% of patients with normal corneal diameters compared with 31.9% of eyes with small corneal diameters. A smaller cornea may reflect an abnormal anterior segment and subtle filtration angle defects, which increase the risk of aphakic glaucoma.19,24

In our study, one third of the eyes had associated ocular anomalies (Table 3). Other researchers5,31 have reported that 50% of patients with aphakic glaucoma have additional eye abnormalities. Microphthalmos5,29 and persistent hyperplastic primary vitreous (PHPV)23 have been suggested as risk factors for the development of glaucoma. In the 170 eyes in our study, microphthalmos (14.1%) and PHPV (5.3%) were 2 of the more common ocular abnormalities. Other researchers6,8,14,15 have also reported microphthalmos in 8.3% to 26.6% of eyes. Johnson and Keech4 did not believe that PHPV was a risk factor and noted that patients with and without PHPV have a 32% incidence of aphakic glaucoma after pediatric lensectomy. Wallace and Plager24 pointed out that the underlying risk factor for these conditions may primarily be the smaller cornea.

Our study is consistent with others in that an increased risk of aphakic glaucoma may be related to certain cataract types, such as complete2, nuclear,2,15,22 and PHPV23 (Table 1). Although 1 study3 suggested that cataract type was not associated with subsequent glaucoma, that series of 8 eyes may have been too small to accurately assess this. These congenital cataract types often necessitate early surgery for better visual rehabilitation. Also, nuclear and PHPV cataracts are more commonly associated with smaller corneal diameters.23,24

It has been suggested that in some patients cataracts and glaucoma may be signs of a yet undescribed congenital ocular syndrome. This possibility is supported by the bilateral lensectomy cases with atypical angle abnormalities in some but is less likely because of the late onset of the glaucoma and the normal angle appearance in others.13,25 Although such an ocular syndrome may not necessarily be inherited,1,13 48 (28.2%) of 170 eyes in our study involved a family history of congenital cataracts in first-degree relatives. Thirty-eight (79.2%) of these 48 eyes belonged to 19 patients with bilateral cataracts. All of these patients with bilateral cataracts developed bilateral glaucoma.

It has also been suggested that the aphakic state per se may increase the risk of glaucoma. In our study, 169 of the 170 eyes were left aphakic at the time of initial cataract surgery. One theory as to why aphakia causes glaucoma was suggested by Paul Kaufman, MD, in response to Walton’s19 American Ophthalmological Society presentation. Taking out the lens during the first year of life without putting anything in its place may prevent normal meshwork development, which may require certain normal structural interactions between the native lens, zonules, ciliary body, and trabecular meshwork.19 At that same American Ophthalmological Society meeting, Albert W. Biglan, MD, observed that patients with corneal diameters less than 10 mm are usually left aphakic.19 The aphakic state may allow blockage of the angle by vitreous2 or may allow vitreous factors to alter trabecular meshwork structure and maturation.25,26

Conversely, it has been suggested that primary pseudophakia decreases the incidence of glaucoma.25 Only 1 of the 170 eyes in our study had primary lens implantation at the time of initial cataract surgery. Asrani et al25 noted that of 377 eyes with primary lens implantation for congenital cataracts, only 1 eye developed glaucoma, with 3.9 years of follow-up, which is less than the mean time of aphakic glaucoma development of 5.3 to 12.2 years.3,10,20,23-25 Unlike our study, Asrani et al25 excluded patients with risk factors for aphakic glaucoma.
(ie, associated ocular anomalies and corneal diameters <10 mm). Also, only 19.4% of patients underwent lensectomy at age 1 year or younger. Another study22 noted that only 3 (6.7%) of 45 eyes developed glaucoma after pediatric lensectomy and primary lens implantation; however, this study also had a shorter follow-up period of 23 months and excluded certain high-risk patients (ie, patients with corneal diameters <10 mm and patients <1 year). Perhaps if certain high-risk patients had not been excluded from these studies and if there were longer follow-up times, the incidence of glaucoma in these studies would have been higher.

Retained degenerating lens proteins may be toxic to the trabecular meshwork15,18,19 and may increase the risk of aphakic glaucoma. Cytokines released by residual lens epithelial cells may also be responsible.16 In our study, 15.0% of eyes had retained lens material. Other studies6,19 have reported 41.6% to 78.0% of patients with residual cortex or lens material. Perhaps modern phacoemulsification techniques with complete cortical removal may benefit patients with congenital cataracts.18,23 The continuous tear capsulorrhexis may also eliminate residual capsular tags to which the iris can adhere and that may cause chronic inflammation.19

Poor pupillary dilation can make the surgery technically more difficult19 and has been associated with an increased risk of glaucoma.2,29 This may increase the rate of complications and the chance for residual cortex.

A corticosteroid-induced mechanism seems unlikely because postoperative corticosteroids are usually used for only 1 to 2 months.25 This is inconsistent with the usual later onset of aphakic glaucoma. However, perhaps the use of high-dose corticosteroids in infancy may alter the still-developing microstructure of the trabecular meshwork.29 None of our patients had a history of prolonged postoperative corticosteroid use.

The increased postoperative inflammation seen in pediatric patients does not seem to be a substantial risk factor. Only 2 of our patients were noted to have severe postoperative inflammation. Although the occurrence of chronic inflammation was not specifically assessed in the study by Walton,19 he noted that the anterior segments of these patients were not characterized by cells, flare, and band keratopathy and, in this way, were different from those of children with chronic anterior uveitis who develop glaucoma.19

A history of secondary surgery is seen more often in children who develop aphakic glaucoma.6,16 Seventy (41.2%) of 170 eyes in our study had surgery for postoperative complications, most commonly for pupillary membrane removal (Table 7). Other researchers5,19 have similarly reported that 58.6% to 75.0% of eyes with glaucoma undergo 1 or more secondary membrane procedures. Retained lens protein and repeated surgery for secondary membrane may cause increased postoperative inflammation and trabecular meshwork damage.6,35

Once glaucoma develops, medical treatment in children may be difficult (Tables 8 and 9). Miotics may reduce visual acuity when dense capsular opacifications are present. In one study,13 2 (11.1%) of 18 patients experienced retinal detachments related to miotic treatment. Ephedrine-induced maculopathy is also a concern in these patients with aphakia and may not be recognized if vision is reduced from other causes.3,15 Asrani et al25 noted that 63.6% of patients were treated with medications alone.

Glaucoma surgery was performed in 97 (57.1%) of 170 eyes (Table 10) compared with 36.4% in the literature.3 Success rates for all types of glaucoma surgery (primary and secondary) are guarded and range from 14.3% to 44.1% (ie, IOP ≤21 mm Hg, with or without glaucoma medications, and no need for further surgery). Sixty-seven (69.1%) of the 97 eyes underwent a single procedure. Asrani and Wilensky7 noted that 78.6% of patients achieved successful IOP control with 1 operation without using glaucoma medications.

Systemic abnormalities were seen in 33.3% of our patients. As in our study (Table 4), Peyman et al27 noted that developmental delay (4 of 25 patients) and cardiac abnormalities (5 of 25 patients) were most common.

The visual prognosis is also guarded. In our study, visual acuity at the last follow-up visit was 20/400 or worse in 66.2% of eyes (Figure 2). The literature5,13,18,33 notes that 11.4% to 100% of patients achieve a final visual acuity of less than 20/200 or 20/400 in the affected eye. The mean visual acuity in our patients was 20/515, which is similar to the 20/510 in the study by Simon et al.3 Once aphakic glaucoma was diagnosed, Asrani and Wilensky7 noted stable vision in 68.8% of patients. They also found that poor vision in most patients was partly due to delay in diagnosis and treatment. Poor visual acuity in patients with aphakic glaucoma is attributable to secondary membranes, nystagmus, strabismic or deprivation amblyopia, and glaucomatous optic nerve damage.1,6

Ophthalmoscopy of eyes in our study after the development of aphakic glaucoma revealed a mean±SD cup-disc ratio of 0.29±0.13 (Table 6). Simon et al3 reported a mean cup-disc ratio of 0.54 (range, 0.15-0.80) in glaucomatous eyes.

Despite the introduction of automated surgical techniques in the 1970s, the incidence of aphakic glaucoma remains high. Open-angle glaucoma is now the most common type of glaucoma after congenital cataract surgery, and it occurs at a mean±SD duration of 4.0±4.6 years after lensectomy. Various risk factors have been suggested. Treatment may be difficult, with 57.1% of patients needing glaucoma surgery. Prognosis is guarded, with about two thirds of our patients having a final visual acuity of 20/400 or worse. Close lifelong follow-up is needed in these patients to detect this condition in its earliest stages and prevent loss of vision.
REFERENCES