contributing factor in many of the recently reported cases. The high incidence of associated neurological abnormalities with congenital oculomotor palsies suggests a possible role for intrauterine brainstem injury.

Embryologically, the oculomotor nerve, nuclei and extraocular muscles are formed during the fifth gestational week. During the prenatal period the brain is susceptible to a variety of insults, including infections, teratogens and hypoxia. Findings in the present case suggest that the defect was intra-axial and that there was extensive brainstem damage, probably caused by a vascular insult during the early gestational period. As the use of newer neuroimaging techniques has increased, recent investigations have demonstrated that congenital oculomotor nerve palsy is often associated with diverse and sometimes profound neurological abnormalities.

When a child presents with oculomotor nerve palsy at birth, a detailed neurological examination and neuroradiological investigation should be undertaken to look for possible intra-axial central nervous system involvement.

References

1. Miller NR. Solitary oculomotor nerve palsy in childhood. Am J Ophthalmol 1977;83:106–11.
2. Balkan R, Hoyt CS. Associated neurologic abnormalities in congenital third nerve palsies. Am J Ophthalmol 1984;97:315–9.
3. Hamed LM. Associated neurologic and ophthalmic findings in congenital oculomotor nerve palsy. Ophthalmology 1991;98:708–14.
4. Tsaloumas MD, Willshaw HE. Congenital oculomotor palsy: associated neurological and ophthalmological findings. Eye 1997;11:500–3.
5. White WL, Mumma JV, Tomasovic JJ. Congenital oculomotor nerve palsy, cerebellar hypoplasia, and facial capillary hemangioma. Am J Ophthalmol 1992;113:497–500.
6. Walsh and Hoyt's Clinical neuro-ophthalmology. 3rd ed, vol 3. Baltimore: Williams and Wilkins, 1969:2340,2387–9.
7. Harley RD. Paralytic strabismus in children: etiologic incidence and management of the third, fourth, and sixth nerve palsies. Ophthalmology 1980;87:24–43.

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Sir,

Transient fogging of acrylic (Acrysof) intraocular lenses

The benefits of phacoemulsification cataract surgery are enhanced by the use of foldable intraocular lenses (IOL) and smaller incisions. In terms of their chemical components, the foldable lenses can be divided into two groups, namely acrylate/methacrylate polymers and silicone elastomers. Minor alterations to the side-chain components of the acrylate/methacrylate polymer backbone result in a wide variety of lenses which differ greatly in terms of their physical and biological properties.[1,2]

The AcrySof IOL (MA30BA, Alcon Labs., Texas) is made of phenylethyl acrylate and phenylethyl methacrylate co-polymers cross-bonded with butanediol acrylate. This material is capable of being folded prior to insertion.[3] Although the lens is well tolerated, reported complications associated with its use include transient marks caused by folding,[2] scratches on the lens optic,[4] stress fractures[5] and post-operative glistenings.[6] The lens can be implanted through an incision with an internal diameter exceeding 3.5 mm,[3] although warming the lens may facilitate folding and allow for introduction through a smaller incision.[7] In this unit, our previous policy was to warm the lens in a heating cupboard before use to facilitate implantation. The temperature of the heating cupboard has been recorded at 47°C. We have recently encountered two cases of transient fogging of the AcrySof IOL which we believe were related to this practice. One of these cases is illustrated here.

Case report

Phacoemulsification cataract surgery was performed on the right eye of a 78-year-old woman with a history of primary open angle glaucoma. Capsulorrhexis, hydrodissection, phacoemulsification and irrigation/aspiration were performed through a 3.5 mm corneal incision and a paracentesis without complication using ProVisc (Alcon Labs., Texas) and the Alcon Legacy 20000 Phaco-emulsifier (Alcon Labs., Texas). A 24 D AcrySof lens (Model MA30BA) was warmed prior to use and folded with the manufacturer-recommended forceps. Prior to folding the lens was inspected and noted to be clear. No irrigating solutions were used to rinse the lens before implantation. After unfolding within the capsular bag, the lens optic was noted to be semi-opaque (Fig. 1). This feature failed to clear after a period of 5 min. The lens was then dislocated into the anterior chamber,

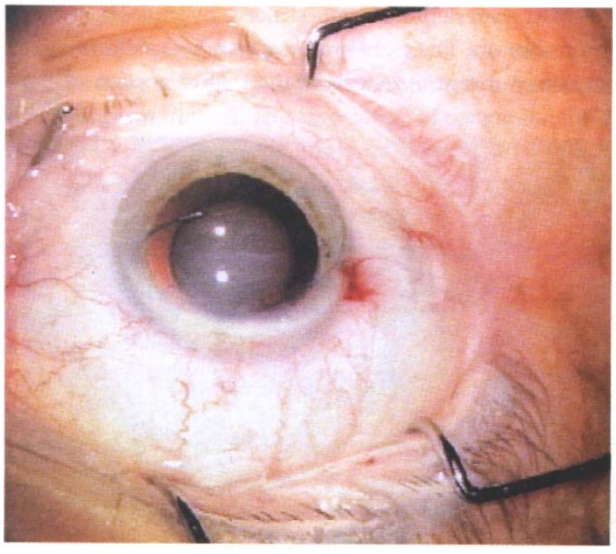

Fig. 1. *The lens has been dislocated into the anterior chamber prior to removal. The fogging of the optic is clearly demonstrated.*

removed through an enlarged incision and replaced with a rigid PMMA lens. The post-operative period was uneventful and the final best-corrected acuity was 6/6.

The semi-opaque AcrySof IOL was kept dry in its packaging at room temperature until the end of the operating list, approximately 3 h later. On inspection under the operating microscope, the lens was then noted to be clear and no other abnormality was found.

Comment

Transient fogging of the AcrySof IOL is a rare complication which we have noted on two occasions. Each time, a decision was made to remove the lens and replace it with a rigid PMMA lens. This was performed without complication through a 6.5 mm incision. The fogging of the IOL was not present on subsequent examination some hours later. We are not aware that this complication has been described before.

Clinically insignificant glistenings have previously been described with the AcrySof IOL.[6] However, these glistenings were late features, noted a week after surgery or after 48 h in laboratory conditions. Although the lens packaging was implicated, temperature fluctuation was most closely linked to the formation of glistenings. The glistenings were believed to occur as a consequence of microvacuole formation within the lens polymer as the temperature is raised beyond the glass transition temperature. Water, from the anterior chamber or the lens packaging system, was then able to enter these vacuoles within the polymer and cause the glistenings due to the different refractive indices of water and the lens polymer. Further support for this theory was provided by the observation that the glistenings disappeared after the lenses studied under laboratory conditions were dried.[6]

At the time of the transient fogging of the AcrySof lenses documented here, our policy had been to warm the lenses in a heating cupboard prior to opening. Each lens was inspected prior to folding and introduced into the eye dry. The fogging was noted soon after the lenses were unfolded in the eye. After removal and dry storage in the original lens case, neither lens was found to show any residual fogging or abnormality. We believe that in our cases the acrylic lenses developed glistenings because of temperature changes caused by warming and subsequent hydration on insertion into the eye. They subsequently became clear after removal because of dehydration.

Since these two cases, our policy has now changed and lenses are stored at room temperature or else in the pocket of a theatre nurse, close to 37 °C. No similar complications have been noted since then. This is in keeping with the manufacturer's recommendation that the storage temperature should not exceed 45 °C.[3] If stored above this recommended temperature, the acrylic material may develop glistenings due to microvacuole formation.[6]

Each of the fogged lenses cleared spontaneously when removed from the eye and stored dry. It is not known whether the lenses would have cleared if left in the anterior chamber. Our observations led us to believe that this is unlikely and we would recommend removal of a fogged lens during primary surgery. However, correct storage of the lens and warming at a temperature not exceeding body temperature should prevent this complication.

References

1. Kohnen T. The variety of foldable intraocular lens materials. J Cataract Refract Surg 1996;22(Suppl 2):1255–8.
2. Milazzo S, Turut P, Blin H. Alterations to the AcrySof intraocular lens during folding. J Cataract Refract Surg 1996;22(Suppl 2): 1351–4.
3. Product Information, Alcon Laboratories, Inc: AcrySof.
4. Oshika T, Shiokawa Y. Effect of folding on the optical quality of soft acrylic intraocular lenses. J Cataract Refract Surg 1996;22(Suppl 2):1360–4.
5. Pfister DR. Stress fractures after folding an acrylic intraocular lens. Am J Ophthalmol 1996;121:572–4.
6. Omar O, Pirayesh A, Mamalis N, Olson RJ. *In vitro* analysis of AcrySof intraocular lens glistenings in AcryPak and Wagon Wheel packaging. J Cataract Refract Surg 1998;24:107–13.
7. Shugar JK. Implantation of AcrySof acrylic intraocular lenses. J Cataract Refract Surg 1996;22:1355–9.

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Sir,

Pre-operative hyphaema in Fuchs' heterochromic uveitis

Lens opacities are common sequelae of Fuchs' heterochromic uveitis and there has therefore been much experience of cataract extraction in this condition. We report a case where cataract surgery using a peribulbar block had to be abandoned after the pre-operative use of the Honan balloon, because of significant hyphaema and hypotony.

Case report

A 50-year-old moderately myopic woman had been followed for left-sided Fuchs' heterochromic uveitis for 10 years. Five years after diagnosis she began to develop a raised intraocular pressure with associated disc cupping, which was treated with a topical beta-blocker and topical carbonic anhydrase inhibitor. The pressure was easily controlled on this combination of treatment, and the fluctuating inflammation was treated with intermittent courses of topical steroids. Ten years after diagnosis she began to complain of blurred vision in the