Case of acute zonal occult outer retinopathy with altitudinal hemianopsia

Since the clinical entity of acute zonal occult outer retinopathy (AZOOR) was initially proposed, it has been noted that the visual loss may be misattributed to lesions in the optic nerve or central nervous system. Even with a likely visual field defect for those diseases—an afferent pupillary defect and reduced subjective central flicker fusion threshold—clinicians should be always aware of the possibility of AZOOR.

Case report

A 32 year old woman noticed a large scotoma in her right eye. She was examined by an ophthalmologist who found her corrected visual acuity to be 0.4 in the right eye and 1.0 in the left eye. She also had an afferent pupillary defect in the right eye. Goldmann perimetry showed a superior altitudinal hemianopic defect in the right eye (fig 1). Subjective central flicker fusion threshold was reduced in the right eye (18 Hz) and normal in the left eye (35 Hz). Ophthalmoscopic examination, fluorescein angiography, blood screening, and computed tomography were normal. Suspecting ischaemic optic neuropathy (ION), a 5 day course of intravenous succinyl hydrocortisone, 100 mg/day, was used but this treatment was not effective. The patient was then referred to us for further examination. Full field rod and cone electroretinograms (ERGs) were reduced in her right eye (about 50% of those in the left eye). Multifocal ERGs (mfERGs) recorded with the VERIS Science 4.0 system (Electro-Diagnostic Imaging, San Mateo, CA, USA) revealed reduced responses in areas corresponding to the visual field defect (fig 2). These findings led us to presume the diagnosis to be AZOOR. While we have followed her for approximately a year, no retinal finding has been observed and the visual defect has not changed.

Comment

Although altitudinal hemianopsia is found in many optic nerve disorders—for example, meningioma, optic neuritis, ION, sinususes or intracranial artery disorders, and congenital abnormalities of the optic nerve head, this type of field defect had been rarely reported in AZOOR. The visual field abnormality in AZOOR varies from case to case, but central or paracentral scotoma is most common. When the clinical entity of AZOOR was initially proposed, the visual loss was attributed to retrobulbar neuritis, a pituitary adenoma, or other intracranial lesions during the early stages of this disease. Normal fundus and fluorescein angiographic findings with dense scotoma led ophthalmologists to suspect optic nerve or intracranial diseases. In addition, the afferent pupillary defect and disc swelling in AZOOR were very misleading. Our patient had a superior altitudinal hemianopic defect, an afferent pupillary defect, the reduced subjective central flicker fusion threshold and no disc swelling, and thus, had to be differentiated from ION or posterior ION (PION) without optic disc involvement. PION is an unusual subset of ION and frequently related to arteritis. ERG observations may be critical for the differential diagnosis of cases with visual field defect without observable retinal lesions that are usually attributed to optic nerve or intracranial diseases. While the full field ERG may be sufficient to make the diagnosis, in many of the cases, focal ERG or mfERG can show the correspondence of the retinal dysfunction to the visual field defect which strongly reinforce the diagnosis of AZOOR.

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References


Congenital optic nerve head pit associated with reduced retinal nerve fibre thickness at the papillomacular bundle

Congenital pits of the optic nerve head result from an imperfect closure of the superior edge of the embryonic fissure. An unequal growth on both sides causes a delayed closure of the fissure at approximately 5 weeks of gestation. Optic pits appear as crater-like...
Histological sections of optic pits define defects in the lamina cribrosa associated with rudimentary retinal tissue, resembling pigmented tissue and aberrant nerve fibres. These anomalous papillomacular nerve fibre bundles may be less resistant, predisposing this sector to spontaneous schisis-like retinal detachments during later life.  

We present a young patient with a unilateral optic pit and a clinically significant temporal nerve fibre loss. In vivo measurements by optical coherency tomography (OCT) determined the thickness of RNFL at the side of the pit and the corresponding papillomacular bundle.

Case report

A 27 year old white woman presented with a 9 month history of blurred vision; her best corrected visual acuity was 20/20 right eye and 20/25 left eye. On Goldmann perimetry in both eyes, there were no visual field defects, accurate or paracentral scotomas. On slit lamp examination the anterior segment appeared normal in both eyes. Fundus biomicroscopy of the left eye revealed a large optic nerve head with a grey oval pit at the temporal margin and a brownish rim at the temporal side. The papillomacular bundle appeared to be darker, extending from the edge of the optic nerve to the macula. In the superior and inferior quadrant the main nerve fibres are visible. The blue arrows indicate the location and direction of the corresponding linear and circular OCT scans.

Indentations of the surface of the optic nerve head usually with a steep temporal wall.

Anatomically the most anterior component of the optic nerve head contains the retinal nerve fibre layer (RNFL), composed of approximately 1.2 million unmyelinated retinal ganglion cell axons extending from all regions of the retina. The outgrowth of axons from certain ganglion cells may be incomplete so that the primitive epithelial papilla is built up with aberrant nerve fibres.

Histological sections of optic pits define defects in the lamina cribrosa associated with rudimentary retinal tissue, resembling pigmented tissue and aberrant nerve fibres. These anomalous papillomacular nerve fibre bundles may be less resistant, predisposing this sector to spontaneous schisis-like retinal detachments during later life.

We present a young patient with a unilateral optic pit and a clinically significant temporal nerve fibre loss. In vivo measurements by optical coherency tomography (OCT) determined the thickness of RNFL at the side of the pit and the corresponding papillomacular bundle.

Figure 2

(A) Horizontal OCT scan of the temporal optic disc and the papillomacular region of the left eye. Fibrogial tissue membrane appears to overlie the vitreoretinal surface at the upper edge of the pit. The thick hyper-reflective band which is white to reddish in colour, corresponds to the retinal nerve fibre layer (RNFL). The reflectivity is elevated and the thickness is wider than normal. 

The standardised measurement of the RNFL determines a thickness of >200 μm at the edge of the optic nerve and 80 μm at 1 DD distance. (B) Horizontal OCT scan of the papillomacular region left eye. A less reflective and thinned hyper-reflective band in red and orange colours extends from the edge of the optic nerve to the fovea. The standardised measurement of the RNFL determines a thickness of 70 μm at the edge of the optic nerve and 5 μm at 1 DD distance. (C) Circular OCT scan of 3.4 mm diameter centred on the optic disc left eye. The cylindrical section is unfolded and displayed as flat cross sectional, two dimensional false colour image. The scan started nasally and measured clockwise perpendicular around the optic nerve with a diameter of 2.0 nerve head. Each b-scan consists of 100 individual A-scans (one thickness value for each 3.6 μm). The RNFL measurement determined a mean thickness of 152 μm in the superior quadrant, 90 μm in the temporal quadrant, 125 μm in the inferior quadrant, 64 μm in the nasal quadrant. There is a marked reduction in the RNFL to 48 μm at the 0 o’clock position consistent with the location of the optic pit.

References

Ocular ischaemic syndrome in thyroid eye disease, confirmed using magnetic resonance angiography

Ocular ischaemic syndrome (OIS) is most commonly caused by severe ipsilateral carotid artery stenosis. Occasionally it is caused by ophtalmic artery stenosis. Features commonly observed are iris neovascularisation, angle neovascularisation, rubecotic glaucoma, and iritis. In the posterior segment common signs are narrowing of the retinal arterioles, mid-peripheral retinal haemorrhages, optic disc pallor or neovascularisation and, rarely, retinal neovascularisation. Fluorescein angiography characteristically demonstrates delayed filling of the retinal circulation and occasionally patchy filling of the choroidal circulation is also observed. To the best of our knowledge OIS has not previously been described in thyroid eye disease. We report a case of OIS in thyroid eye disease confirmed by magnetic resonance angiography (MRA) and treated by orbital decompression.

Case report

A 48 year old woman with known thyroid eye disease presented with a 4 week history of pain, redness, and reduced visual acuity in her right eye. Eight years previously she had undergone bilateral three wall orbital decompression for severe corneal exposure. On examination visual acuity was counting fingers in the right eye and 6/9 in the left. There was bilateral lid retraction and mild generalised restriction of eye movements. There was bilateral proptosis measuring 24 mm in the right eye and 23 mm in the left (Keller exophthalmometer). A right afferent pupillary defect was present. Intraocular pressures were 50 mm Hg in the right eye and 20 mm Hg in the left. There was right corneal oedema, rubecotic iridis (Fig 1), and moderate anterior chamber activity. Gonioscopy showed an open, grade 1 (Shaffer’s classification) with rubecotic vessels present in the angle. Fundal examination was limited by the corneal oedema but no specific abnormality was identified. Examination of the left eye was normal.

Fluorescein angiography showed delayed filling of the retinal vasculature in the right eye relative to the left. Computed tomography scans of the orbits showed previous bilateral three wall orbital decompression and diffuse enlargement of extraocular muscles. Carotid duplex ultrasound examination was normal. An MRA of the orbits demonstrated that blood flow in the right ophtalmic artery was reduced. Blood flow in the left ophtalmic artery was normal (Fig 2).

The patient was admitted and treated with intravenous mannitol and acetazolamide and topical betaxolol 0.5% but intraocular pressure remained elevated at 29 mm Hg. A further right orbital decompression was performed (where the lateral orbital wall was removed as far posteriorly as the anterior wall of the middle cranial fossa and superiorly to the floor of the anterior cranial fossa). Postoperatively the right proptosis measured 21 mm, the relative afferent pupillary defect resolved and the intraocular pressure was controlled (<20 mm Hg) with oral acetazolamide and topical betaxolol 0.5%. The corneal oedema resolved and the visual acuity gradually improved to 6/9. At the 3 month follow up postoperatively the rubecotic vessels had regressed. An MRA performed 4 months postoperatively demonstrated normal blood flow in both ophtalmic arteries (Fig 3).

Image 1 Photograph of the right iris demonstrating rubecotic iridis.

Figure 1 Photograph of the right iris demonstrating rubecotic iridis.

Image 2 Preoperative MRA. Blood flow is clearly visible in the left opthalmic artery (arrow). The absence of signal from the right opthalmic artery demonstrates that blood flow in the right opthalmic artery is reduced.

Figure 2 Preoperative MRA. Blood flow is clearly visible in the left opthalmic artery (arrow). The absence of signal from the right opthalmic artery demonstrates that blood flow in the right opthalmic artery is reduced.

Image 3 Postoperative MRA. Normal blood flow is present in both opthalmic arteries (arrows).

Figure 3 Postoperative MRA. Normal blood flow is present in both opthalmic arteries (arrows).

Comment

Imaging methods available for evaluating the opthalmic artery include duplex ultrasonography and cerebral angiography. Duplex ultrasonography is a non-invasive technique that gives quantitative information about flow; however, it requires an experienced operator and it is not always possible to positively identify the opthalmic artery. Cerebral angiography is an invasive technique with the inherent risk of embolisation and stroke. MRA is a relatively new technique and has not previously been used to investigate disturbances of blood flow in the opthalmic artery. It is non-invasive and does not require the level of technical experience required for Doppler studies. MRA detects blood flow at a defined velocity. In this case 25 mm/s was chosen as it has been shown in many studies using Doppler ultrasound to be the mean opthalmic artery blood flow. The absence of signal from the right opthalmic artery in the preoperative MRA demonstrates that at no stage during the cardiac cycle was blood flowing at this velocity in the artery. The images shown in Figures 2 and 3 are composites of all slices taken through the orbits. Hence it is not possible that one of the opthalmic arteries could have been missed as a result of the orientation of any one particular slice.

Various abnormalities of the orbital circulation have been reported in thyroid opthalmopathy. Blood flow in the superior opthalmic vein has been shown to be reduced, or even reversed in some patients. Increased central retinal artery, opthalmic artery, and retinal blood flow have also been demonstrated. Ischaemia of the optic nerve head has been postulated to have a role in the development of optic neuropathy in some patients with thyroid opthalmopathy. However, to the best of our knowledge opthalmic artery obstruction as a result of thyroid eye disease has not previously been described.

In summary, this case demonstrates for the first time, the ocular ischaemic syndrome as a result of opthalmic artery obstruction in thyroid eye disease. Furthermore, it demonstrates the usefulness of MR imaging in evaluation of the opthalmic artery.

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References


**References**

We thank Professor McLeod for his interest in our paper and value the opportunity to address some of the issues he has raised.

McLeod notes that surgical success can be judged only if the retina has remained attached for a minimum of 6 months from the last retinal procedure. He notes that 10 (43%) of 23 eyes in our report had a follow up of only 1 or 2 months. Tables 1–5 list the results in 17 (74%) eyes on which we have follow up of at least 6 months (mean 9.3 months). Of the six patients on whom we do not have at least 6 months’ follow up, two have left the United States, and the whereabouts of four are unknown. The follow up of these six patients ranged from 1 to 4 months after surgery.

The composition of the subgroup with at least 6 months’ follow up strongly resembles the composition of the entire group of 23 eyes. For example, the indications for surgery are almost identical in their representation (Table 1). The average complexity score in this subgroup was 4.5, which is the same as that of the entire cohort. Additional details regarding this cohort of 17 eyes are as follows. In eight (47%) eyes, silicone oil infusion (SOI) was part of the initial operation anatomic success and other predictors of postoperative vision after complex retinal detachment repair with vitrectomy and silicone oil tamponade. Am J Ophthalmol 2000;130:745–50.

Table 1 Surgical indications

<table>
<thead>
<tr>
<th>Retinal detachment site</th>
<th>Eyes with SOI bilaterally</th>
<th>Eyes with SOI unilaterally</th>
<th>Eyes with SOI in fellow eye</th>
<th>Eyes with SOI in only one eye</th>
<th>Eyes with SOI &amp; PPV</th>
<th>Eyes with PPV only</th>
<th>Eyes with PPV or SOI</th>
<th>Eyes with SOI or PPV</th>
<th>Eyes with SOI and PPV</th>
<th>Eyes with SOI only</th>
<th>Eyes with PPV only</th>
<th>Eyes with SOI &amp; PPV only</th>
<th>Eyes with SOI &amp; PPV &amp; PPV only</th>
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</thead>
<tbody>
<tr>
<td>Thinned retina</td>
<td>17/23 (74%)</td>
<td>1/23 (4.3%)</td>
<td>4/23 (17.4%)</td>
<td>2/23 (8.7%)</td>
<td>1/23 (4.3%)</td>
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1 TRD = traction retinal detachment; VH = vitreous haemorrhage; TRRD = traction rhegmatogenous retinal detachment; FS = fibrinoid syndrome; NVG = neovascular glaucoma.

With longer follow up, visual results were not as good as we reported initially (Table 3). Among eyes with at least 6 months’ follow up (and as noted in our initial report), two (9%) had no light perception at last follow up (neither underwent scleral buckling). Both eyes had preserved vision of light perception. Loss of light perception was due to retinal and optic nerve ischaemia in each case. Preoperatively, the visual acuity of all patients ranged from light perception to less than counting fingers at 1 foot. Six months or more after surgery, three (18%) of 17 eyes had vision greater than or equal to 5/200. Among the entire cohort of 23 eyes, five (22%) had vision greater than or equal to 5/200.

The retina was reattached in two (40%) eyes. The third eye developed hyptony despite complete retinal attachment five months after SOI and underwent repeat surgery with additional SOI and epiploic dissection but became phthhalis. The remaining two patients declined additional surgery. Therefore, with multiple operations employing PPV and SOI, the final anatomical success rate at last follow up was 14/17 (82%), which is close the final anatomical success rate (20/23 (87%)) we reported previously.

A few eyes with at least 6 months’ follow up were pseudophakic. Among the 17 eyes with at least 6 months’ follow up, six (35%) had intraocular pressure ≤5 mm Hg. In our initial report, five (23%) of 23 eyes had intraocular pressure ≤5 mm Hg. Three of these six eyes had persistent retinal detachment, which we presumed to be the cause of the hypotony. Among eyes with at least 6 months’ follow up, the remaining 11 (65%) had intraocular pressure ranging from 6–48 mm Hg, with four patients taking anti-glaucoma medications.

Intraoperative complications were not different among eyes with at least 6 months’ follow up versus the entire cohort of 23 eyes (Table 5). Postoperative complications differed in that there was an increased prevalence of cataract, hyptony, and silicone oil in the anterior chamber over time, which is not surprising.

McLeod suggests that in addition to using data from eyes with at least 6 months’ follow up, one should use the status of the fellow eye to judge surgical success. At the time of surgery, all fellow eyes had proliferative diabetic retinopathy (in addition to other vision threatening conditions) and had undergone full preterinal photoacoagulation (Table 6). Among patients with traction retinal detachment in the fellow eye, two underwent fellow eye surgery and one patient refused surgery (Table 6). Six (29%) of 21 fellow eyes were pseudophakic. Among the six fellow eyes with visual acuity <20/400, two had no light perception. Among the 21 patients we reported, the severity of disease in the fellow eye was such that two patients underwent PPV+SOI bilaterally, and results from both pairs of eyes were similar to those of the entire cohort (Table 4). The rate of rubeosis iridis regression was greater than we reported initially (that is, 3/7 (43%)) because of continued regression of rubeosis during the longer period of follow up (Table 4). Of the three eyes with NVG, one eye underwent Baerveldt valve placement with normalisation of the postoperative intraocular pressure. Five months after surgery, however, the eye developed hyptony. Subsequently, the valve was removed, and the eye underwent additional SOI. As noted above, however, the eye became phthhalis. As reported initially, the NVG regressed after surgery in the second eye, and the third eye had NVG regression but no light perception postoperatively because of ischaemia. As noted in our initial report, only one eye developed de novo rubeosis iridis. Among the 17 eyes with at least 6 months’ follow up, six (35%) had intraocular pressure ≤5 mm Hg. In our initial report, five (23%) of 23 eyes had intraocular pressure ≤5 mm Hg. Three of these six eyes had persistent retinal detachment, which we presumed to be the cause of the hypotony. Among eyes with at least 6 months’ follow up, the remaining 11 (65%) had intraocular pressure ranging from 6–48 mm Hg, with four patients taking anti-glaucoma medications.
that silicone oil was needed in all these cases described. Thus, the majority of our patients were visually disabled because of bilateral, severe eye disease.

McLeod points out that only seven (30%) of 23 eyes in our series had retinal breaks (either pre-existing or intraoperative), and he asks what the rationale for silicone oil use was in the remaining 16 eyes. It is not our habit to use silicone oil routinely for re-operation of eyes with proliferative diabetic retinopathy. We usually manage such cases with membrane dissection, extensive laser retinopathy. We usually manage such cases with membrane dissection, extensive laser retinopathy. We usually manage such cases with membrane dissection, extensive laser retinopathy. We usually manage such cases with membrane dissection, extensive laser retinopathy. We usually manage such cases with membrane dissection, extensive laser retinopathy. We usually manage such cases with membrane dissection, extensive laser retinopathy. We usually manage such cases with membrane dissection, extensive laser retinopathy. We usually manage such cases with membrane dissection, extensive laser retinopathy. 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Primary scleral buckle placement during repair of posterior segment open globe injuries

We read with interest the recent article by Arroyo and associates. They are to be commended on a very interesting study to compare the visual and anatomical outcomes of patients undergoing primary scleral buckle placement during posterior segment open globe repair with matched control patients who did not undergo primary scleral buckle placement.

Prophylactic scleral buckle of posterior segment open globe injuries has been a controversial topic in ophthalmology. The value of scleral buckling to support peripheral and especially inferior breaks is rarely disputed. However, the utility of using an encircling buckle in the absence of retinal breaks remains controversial.

The benefits of primary scleral buckle placement are that it is technically easy and there is no scarring between the wound and overlying vitreous capsule and conjunctiva. However, there are some important considerations against primary scleral buckle such as the perforating injury subsequent rhegmatogenous retinal detachment (RD) is often not directly related to the site of the posterior exit wound but develops secondary to a new retinal break in the vitreous base region within 2 clock hours of the scleral wound. In addition, it is usually difficult to place a buckle over the exit wound and involves potentially high morbidity (especially in the hands of an inexperienced doctor who usually receives the patient in the emergency room (at least in Venezuela)).

To counter subsequent traction at the vitreous base, a vitrectomy may be just as effective as a prophylactic scleral buckle, avoiding the associated morbidity. If retinal incarceration occurs through the wound, secondary reconstruction must almost always be performed anyway, typically involving a scleral buckle and vitrectomy 10–14 days after the injury (when inflammation is under control, and the intraocular anatomical status has been assessed adequately).

We believe that the results of the study by Arroyo and associates contribute to the understanding of the role of prophylactic primary scleral buckle in the treatment of posterior segment open globe injuries. Their impressive results suggest that the benefits of placing a prophylactic primary scleral buckle may outweigh the risks involved. A multi-centre randomised clinical trial is desirable to confirm their results.

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Reference

Author’s reply
We read with interest the comments made by Fernandez and colleagues regarding our article. We certainly agree that new breaks may develop in the vitreous base region within 2 clock hours of the scleral wound. Because of this, we advocate the use of encircling scleral buckles (3.5–5 mm wide) as opposed to segmental scleral buckles in patients undergoing primary open globe injury repair.

We agree that placing an encircling scleral buckle to support the posterior edge of the vitreous base does require more skill than simply closing an open globe wound. However, we have found that with adequate training, encircling scleral buckles can usually be placed all open globe injury repair in 15–30 minutes.

The timing of vitrectomy in cases of ocular trauma is controversial. We also try to wait at least 1–2 weeks before performing a vitrectomy, if necessary, in order to minimise the risks of very early (potential bleeding, inflammation, and poor visualisation) and very late (cellular proliferation) complications.

We agree that a prospective randomised clinical trial is needed to better delineate the role of primary encircling scleral buckle placement at the time of open globe injury repair.

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NOTICES

Helping the blind and visually impaired
The latest issue of Community Eye Health (No 45) discusses help for the blind, with an editorial by Sir John Wall of the Royal National Institute for the Blind on the rights of blind people. For further information please contact: Journal of Community Eye Health, International Resource Centre, International Centre for Eye Health, Department of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, UK (tel: +44 (0)20 7612 7964; email: Anita.Shah@khtmc.ac.uk; website: www.jech.co.uk). Annual subscription (4 issues) £228/US$45. Free to developing country applicants.

Second Sight
Second Sight, a UK based charity whose aims are to eliminate the backlog of cataract blind in India by the year 2020 and to establish strong links between Indian and British ophthalmologists, is regularly sending volunteer ophthalmologists to India. Details of how to volunteer are available at the charity’s website (www.secondsight.org.uk) or by contacting Dr Lucy Mathen (lucymathen@yahoo.com).

Specific Eye ConditionS (SPECS)
Specific Eye ConditionS (SPECS) is a not for profit organisation which acts as an umbrella organisation for support groups of any conditions or syndrome with an integral eye disorder. SPECS represents over 50 different organisations related to eye disorders ranging from conditions that are relatively common to very rare syndromes. The website acts as a portal giving direct access to support groups’ own websites. The SPECS directory is a valuable resource for professionals and may also be of interest to people with a visual impairment or who are blind. For further details about SPECS contact Kay Parkinson, SPECS Development Officer (tel: +44 (0)1180 534328; email: k/econds.org.uk; website: www.eyeconditions.org.uk).

The British Retinitis PigmentosA Society
The British Retinitis Pigmentosa Society (BRPS) was formed in 1975 to bring together people with retinitis pigmentosa and their families. The aim of the Society is to raise funds to support the programme of medical research into an eventual cure for this hereditary disease, and through the BRPS welfare service, help members and their families cope with the everyday concerns caused by retinitis pigmentosa. Part of the welfare service is the telephone help line (+44 (0)1280 860 363) for any queries relating to retinitis pigmentosa, especially for those recently diagnosed with retinitis pigmentosa (tel: +44 (0)1180 821 334; email: lynda@brps.demon.co.uk; website: www.brps.demon.co.uk).

Surgical Eye Expeditions International
Volunteer ophthalmologists in active surgical practice are needed to participate in short term, sight restoring eye surgery clinics around the world. Contact: Harry S Brown, Surgical Eye Expeditions International, 27 East De La Guerra, C-2, Santa Barbara, CA 93101-9858, USA (tel: +805 963 3303; fax: +805 963 3564; email: hsbrown.md@cox.net or secintl@secintl.org; website: www.secintl.org).

Rise in organ transplant numbers
According to UK Transplant, the UK has seen the highest number of organ transplants in six years. Last year (1 April 2002 to 31 March 2003) 2777 patients had their lives saved or dramatically improved through the generosity of 1066 donors. This equated to a 6% increase compared to the previous 12 months (1 April 2001 to 31 March 2002). Furthermore during 2002–3, the highest number of people benefited from a cornea transplant for five years (1997–98) and 240 more people had their sight restored than the previous year. For further information see

www.bjophthalmol.com
UK Transplant’s website (www.uktransplant.org.uk).

Elimination of avoidable blindness
The 56th World Health Assembly (WHA) considered the report on the elimination of avoidable blindness (doc A56/26) and urged Member States to: (1) Commit themselves to supporting the Global Initiative for the Elimination of Avoidable Blindness by setting up a national Vision 2020 plan by 2005; (2) Establish a national coordinating committee for Vision 2020, or a national blindness prevention committee to help implement the plan; (3) Implement the plan by 2007; (4) Include effective monitoring and evaluation of the plan with the aim of showing a reduction in the magnitude of avoidable blindness by 2010; (5) To support the mobilisation of resources for eliminating avoidable blindness as well as aid in the coordination and support of national capability.

Ophthalmic Anesthesia Society (OAS)—17th Scientific Meeting
The 17th Scientific Meeting of the Ophthalmic Anesthesia Society (OAS) will be held 3-5 October 2003 at the Westin Michigan Avenue Chicago, Chicago, USA. Programme co-chairs: Marc Allen Feldman MD MHS and Steven T Charles MD. The CME joint sponsor is the Cleveland Clinic Foundation; CME hours are pending. Fees for OAS members are $300; non-members $475; students $50. Further details: OAS, 793-A Foothill Blvd, PMB 119, San Luis Obispo, CA 93405 USA (tel: +1 805 534 0300; fax: +1 805 534 9030; email: info@eyeanesthesia.org; website: www.eyeanesthesia.org).

Glaucoma Society 24th Annual Meeting and Dinner
The Glaucoma Society 24th Annual Meeting and Dinner will take place on 20 November 2003, from 8:30 am to 5:00 pm at The Royal College of Physicians, London, UK. Further details: Ms Janet Flowers (email: glaucosoc@ukeire.freeserve.co.uk).

Detachment Course with international faculty on: Retinal and Vitreous Surgery with Case Presentations preceding the Annual Meeting of Iranian Society of Ophthalmology
The detachment course with international faculty on: Retinal and Vitreous Surgery with Case Presentations preceding Annual Meeting of Iranian Society of Ophthalmology will be held on 29-30 November 2003 and 1-4 December 2003 respectively, at the Razi Conference Center, Hemmat Hyw, Tehran, Iran. Further details: Scientific programme: Prof Ingrid Kreissig, University of Tuebingen, Schleichstr. 12, Breuningerbau, 72076 Tuebingen, Germany (tel: +49 7071 295209; email: ingrid.kreissig@med.uni-tuebingen.de). Local organisation: Dr Arman Masheyekhi, Dr Siamak Moradian, Dept of Ophthalmology, Labbafinejad Medical Center, Pasdaran Ave, Boosan 9, Tehran, 16666, Iran (fax: +98 21 254 9039; email: labbafi@hotmail.com).
Case of acute zonal occult outer retinopathy with altitudinal hemianopsia

Y Shimada, M Horiguchi, H Yamada, T Sugino, H Suzuki and Y Oya

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