PostScript

Intravitreal injection of triamcinolone acetonide as treatment for chronic uveitis

Chronic intraocular inflammation such as chronic idiopathic uveitis in both eyes for 5 years had been treated topically, peribulbarly, and systemically with corticosteroids. As a steroid responder, she had developed secondary ocular hypertension. Steroid induced cataract in her right eye was operated on by phacoaspiration, transpupillary anterior vitrectomy, and posterior chamber lens implantation. To reduce the systemic side effects of steroid treatment, systemic cyclosporin A had been added to the treatment scheme since January 1998. In February 2000, she presented again with a severe uveitis with papilloedema and cystoid macular oedema. Despite intensive topical treatment with steroids given hourly, and systemic acetazolamide, visual acuity remained in the range 0.10–0.16. To avoid the side effects of systemic steroid treatment and to achieve high and longstanding concentrations of steroids in the eye, we injected 20 mg crys- talline triamcinolone acetonide into the vitreous cavity of the right eye in July 2000 with topical anaesthesia. Within the next 5 weeks, visual acuity increased to 0.5. Intraocular pressure in- creased to a maximum of 38 mm Hg, and was reduced to the normal range with topical antiglaucomatous medication. Four months after the injection, the steroid crystals were resorbed, visual acuity returned to the preop- erative level of 0.1, and with topical steroids given, intraocular pressure decreased to values of less than 23 mm Hg without further antiglaucomatous medication.

Comment
In ophthalmology, corticosteroids applied topically or systemically are well known and have widely been used to suppress intraocular inflammation. Based on experimental studies performed by Machemer, Peyman and others, as well as on clinical observations, intravitreal injections of triamcinolone acetonide have increasingly been reported as treatment for intraocular neovascular, oedematous, or inflammatory diseases. These include diffuse diabetic macular oedema, proliferative diabetic retinopathy, neovascular glaucoma, exudative age related macular degeneration, and uveitis.1–6 In agreement with these previous studies, the results of the present report suggest that the intravitreal injection of triami- nolone acetonide may be an additional option in the treatment of chronic uveitis. Future studies may address different types of uveitis.

References

Ophthalmodynamometric estimation of cerebrospinal fluid pressure in pseudotumour cerebi
Measurement of the cerebrospinal fluid pressure usually requires a lumbar puncture or craniotomy to get direct access to the cerebrospinal fluid space. These techniques, however, are invasive and so carry the risk of complica- tions such as infections and damage to the neural structures. Furthermore, owing to the leakage of cerebrospinal fluid during the puncture, the cerebrospinal fluid pressure will be altered in the moment the measurement is performed. It therefore seems desirable to have a non-invasive method allowing the estimation of the intracerebral pressure without requir- ing a direct access to the brain or spinal cord. We describe a patient in whom ophthalmody- namometry strongly suggested an increased intracerebral pressure which was confirmed by eventual direct measurement.

Case report
A 12 year old female patient presented with acute vomiting, massive headache, and bilateral absence nerve palsy. Visual acuity was 20/20 in both eyes, and visual fields were unremarkable, except for an enlarged blind spot. Both optic discs showed a prominence of 119 (right eye) and 0.6 mm (left eye) as measured by confocal laser scanning tomography. Intraocular pressure measured 18 mm Hg. With topical anaesthesia, a Goldmann contact lens fitted with a pressure sensor mounted into its holding ring was put onto the cornea (Fig 1). Pressure was asserted onto the globe by slightly pressing the contact lens, and the pressure value at the time when the central retinal vein started pulsating was noted. The measurements of this new tech- nique of ophthalmodynamometry were repeated nine times in both eyes. The central retinal vein collapse pressure as the sum of the ophthalmodynamometric value plus the intraocular pressure, measured 103 relative units right eye and 98 relative units left eye. These values were significantly higher than normal values (6.1 (SD 8.4) rela- tive units) determined previously in normal subjects (own data). Direct measurement of cerebrospinal fluid pressure by lumbar puncture performed about 5 hours later revealed a value of 107 cm water column (equivalent to 82.3 mm Hg). In combination with other clinical findings, the diagnosis of pseudotumo- mour cerebi was made.

Comment
The central retinal vein is the only structure whose appearance depends on its inner pressure, and which runs through the cerebro- spinal fluid space and which is accessible from outside the body without any invasive proc- edure being performed. After exiting the eye through the optic disc, the central retinal vein goes through the retrobulbar part of the optic nerve before it traverses the subarachnoidal and subdural spaces of the optic nerve and pierces the optic nerve meninges. The pres- sure in the central retinal vein is thus at least as high as the cerebrospinal fluid pressure. The central retinal vein collapse pressure may be measurable by ophthalmodynamometry since the vein will start to pulsate, if the sum

Figure 1 Photograph showing the Goldmann contact lens with a pressure sensor mounted into the holding ring of the contact lens and connected to a display.
of intraocular pressure plus an external pressure exerted onto the eye equals the diastolic pressure of the central retinal vein. The intraocular pressure can be determined by applanation tonometry, and the additional pressure exerted onto the globe can be measured by ophthalmodynamometry. In the ophthalmodynamometers used in the 1960s and 1970s, determinations of the central retinal vein pressure were often difficult or almost impossible so that the central retinal vein pressure has usually not been measured. The new ophthalmodynamometer used in the present study (Fig 1) may overcome some of the problems associated with the old ophthalmodynamometers. In a previous study on the reproducibility of the new technique, the variation of the central retinal vein collapse pressure was 15.9% (SD 11.9%). The present study suggests that, in patients with markedly increased intracerebral pressure, the new, Goldmann lens associated, ophthalmodynamometer may provide information about the intracerebral pressure by estimating the central retinal vein collapse pressure. It may be helpful for the neuro-ophthalmological diagnosis of diseases associated with increased intracerebral pressure.

Proprietary interest: none.

J B Jonas, B Harder
Department of Ophthalmology, Faculty of Clinical Medicine Mannheim, University of Heidelberg, 68167 Mannheim, Germany

Correspondence to: Dr J Jonas, Universitäts-Augenklinik, Theodor-Kutzer-Ufer 1-3, 68167 Mannheim, Germany; Jost.Jonas@augen.ma.uni-heidelberg.de

Accepted for publication 14 July 2002

References

Treatment of atopic blepharitis by controlling eyelid skin water retention ability with ceramide gel application

Atopic blepharitis is one of the major ocular complications of atopic dermatitis (AD). It has been pointed out that atopic patients have dry skin accompanied by barrier disruption and water deficiency. Previously, we assessed the water retention ability of eyelid skin by measuring the water content and water evaporation rate from the eyelid in patients with atopic blepharitis. The water content positively correlated and water evaporation rate from the eyelid negatively correlated with the severity of blepharitis.

Ceramide comprises about 30% of stratum corneum lipids, which have an important role in both the water retention and barrier function of the skin. Ceramide abnormalities in several skin disorders, such as AD, have been reported. Decreased levels of ceramides may be attributable to the insufficient water retention of the skin in AD. Apytt Gel (Zenyaku Kogyo, Tokyo, Japan) is a product containing galactosyl ceramides extracted from horses as a major moisturizing ingredient. In this study, we assessed the efficacy and safety of this gel product in patients with mild atopic blepharitis by measuring the water retention ability of the eyelid skin before and after prescription.

Methods and results

Sixteen lids of eight patients (five males and three females, 7–35 years old, average age 16.0 (SEM 8.4) years) diagnosed as having AD by dermatologists, according to Hanifin and Rajka’s criteria, were examined. Because ceramide gel has no anti-inflammatory effect, cases with severe inflammation were excluded from this investigation. After informed consent was obtained, patients were instructed to place Apytt Gel on their eyelids two to five times a day after washing their faces. Assessment of clinical findings using measurement of water retention ability were performed as previously described before and after 4 weeks of the beginning of application. Statistical analysis was carried out by non-parametric tests (Wilcoxon test). A p value of 0.05 or less was considered statistically significant.

Water content of eyelid skin was significantly increased after treatment (30.6% (6.0%) before treatment, 41.2% (8.5%) after treatment; p<0.025) (Fig 1). Water evaporation values were significantly decreased after treatment (4.5 (1.1) × 10−7 g/cm²/s before treatment, 3.5 (0.9) × 10−7 g/cm²/s after treatment; p<0.05) (Fig 2). No slit lamp findings indicating toxicity were observed during the course of the study.

Comment

As the eyelid is a borderline lesion between dermatology and ophthalmology with influences on ocular homeostasis, dermatologists often hesitate in prescribing sufficient medication to the eyelids. The assessment and treatment of atopic blepharitis is therefore an important aspect of ophthalmological examination in atopic patients.

Ceramide gel treatment for 4 weeks significantly improved the water retention ability of eyelid skin of patients with mild atopic blepharitis. Among various moisturizing products, the application of the ceramide gel is reasonable, because ceramide deficiency has been reported in the skin of atopic patients. Ceramide gel alleviates dryness without stickiness, and patients experience little discomfort. Comfort during application is thought to be one of the important factors for the compliance of patients. Some patients interrupt application of ointments, such as petrolatum (Vaseline), to the eyelid because of stickiness or because the shiny appearance around the eyes is cosmetically conspicuous. Although strong anti-inflammatory drugs are necessary in acute exacerbations of atopic blepharitis, moisturizing of the skin using ceramide gel application represents a useful supplementary therapy during periods of relatively light inflammation.

Acknowledgement

The authors wish to thank Ms Mie Sasaki and Ms Saori Nishijima for their assistance in taking measurements of water evaporation from eyelid skin.

Financial support: none.

Proprietary interest: none.

N Asano-Kato, K Fukagawa, Y Takano, T Kawakita, K Tsubota, H Fujishima
Department of Ophthalmology, Tokyo Dental College, Japan

S Takahashi
Department of Dermatology

Correspondence to: Naoko Asano-Kato, MD, Department of Ophthalmology, Tokyo Dental College, Chiba, Japan, S11-13 Sugano, Ichikawa-shi, Chiba 272-8513, Japan; naokato@bc.iij4u.or.jp

Accepted for publication 15 July 2002

References
An unusual tumour of the lacrimal gland

Lacrimal gland swelling is usually due to an inflammatory or neoplastic process. We report an oncocytoma as the cause of lacrimal gland swelling, and review the literature. Oncocytoma of the lacrimal gland is extremely rare and has been described only three times before.

Case report

A 72 year old man experienced periodic swelling of his right eyelid over a period of 9 months. For 2 months he complained of vertical diplopia. He had a past medical history of chronic obstructive airways disease and a past ocular history of early cataract, asteroid hyalosis of the vitreous body, and primary open angle glaucoma.

On examination visual acuity of both eyes was 0.50. External examination showed a right hypopyon. There was a 3 mm of proptosis of the right eye. Eye movements in that eye were restricted in all directions. Slit lamp evaluation showed bilateral mild cataract. Intraocular pressures were normal (12 and 10 mm Hg respectively). Funduscopic examination yielded cup:disc ratios of 0.8.

Computed tomography (CT) of orbit (Fig 1) showed an extraconal solid space occupying mass in the lacrimal fossa. The tumour displaced the right eye inferiorly. The tumour was thought to arise from the lacrimal gland. A fine needle aspiration cytology demonstrated proliferation of oncocytic cells. The tumour was removed in toto via a lateral orbitotomy. The operation and the postoperative period were uneventful.

Histological and macroscopic description yielded a spherically shaped, partially encapsulated tissue (measuring 2.8 × 3.0 × 1.9 cm). After preparation it had a homogeneous brownish tuberiform aspect. Microscopic examination (Fig 2) showed fibrous tissue with focally pre-existing remnants of lacrimal gland tissue. There was a sharply demarcated tumour composed of tubular structures lined with focally pre-existing remnants of lacrimal gland tissue. There was a sharply demarcated tumour consisting of eosinophilic, granular cytoplasm with round to oval shaped relative small nuclei and nucleoli. No evidence of angioinvasive growth was seen. A diagnosis of a radically removed oncocytoma was made.

Postoperative visual acuity of the right eye was reduced because of poor tear secretion confirmed on Schirmer testing and slit lamp examination showed filamentary keratopathy. Lubricating eye drops were prescribed and collagen pentalug plugs were inserted in the superior and inferior puncta. Diplopia and the motility disturbance diminished. Follow up to date is 1½ years and no regrowth has been assessed.

Comment

Oncocytomas (synonyms: oxyphilic adenomas or oncocytic adenomas) are benign, epithelial tumours arising in the ductal cell lining of apocrine glandular structures. In an oncocytoma the oncocyes can form nests, cords, and tubules. Oncocytes can be found among the epithelial cells of various normal organs. Oncocytomas occur frequently and have been described in salivary, thyroid, parathyroid, buccal mucosa, breast, kidney, pharynx, and larynx. If they occur near the eye, they are more commonly located in caruncle, lacrimal sac, accessory lacrimal glands of the conjunctiva and rarely in the lacrimal gland. For unknown reasons oncocytic lesions begin to appear in early adulthood and proliferate with age.

Most lacrimal gland masses represent inflammatory disease, either responding to antibiotics or anti-inflammatory medication. Various malignant tumours of the lacrimal gland have been described varying from lymphoproliferative disorders to epithelial neoplasms. Approximately 50% of epithelial tumours are benign mixed tumours (pleomorphic adenomas) and about 50% are carcinomas. In the lacrimal gland mass is found to be an oncocytoma, as described in our case and in three other cases in the literature,1 2 as an oncocytic carcinoma.

Beskid and Zarzcka described a 39 year old woman with an oncocytoma of the lacrimal gland. Riedel et al3 reported a 1.5 year old Afri- can girl with an oncocytoma of the lacrimal gland. This is the only case in the literature that reported on an oncocytoma in childhood. Riedel et al3 also reported a 76 year old woman with an oncocytoma of her lacrimal gland, that presented with a 2 month period of swelling of her lacrimal fossa without proptosis. After excision there was no regrowth during a follow up period of 3.5 years. Proliferations of oncocytic cells can also show malignant features and become malignant oncocytomas. A 58 year old man reported by Riedel4 had a malignant oncocytoma (synonym: oxyphilic adenocarcinoma) of the lacrimal gland. He had a 3 month history of proptosis of his eye and diplopia. On presentation the tumour had intracranial extension.

Despite radical resection and postoperative radiation therapy, he died 6 months later from liver metastases. Dorello et al5 described a similar case of a 59 year old patient with an oncocytic carcinoma of the lacrimal gland with intracranial extension. The patient died approximately 2 years after development of his clinical symptoms (exophthalmos and diplopia), despite orbital exenteration and radiation therapy. A 81 year old woman reported by Biggs6 had a 6 month history of proptosis due to an oncocytic adenocarcinoma of the lacrimal gland. No follow up information was given.

In summary, a 72 year old man was found to have an oncocytoma of the lacrimal gland. Oncocytoma has to be added to the differential diagnosis of lacrimal gland swelling.

References


Morning glory disc anomaly: an atypical case

When optic disc elevation is encountered on funduscopic examination, the first concern is whether it represents true disc oedema. We present a patient who was ultimately referred to us by a retinal specialist because of unilateral ‘‘disc swelling’’. Further evaluation suggested that the patient had a congenital optic disc anomaly that was atypical in appearance, but most likely a variant of the morning glory disc anomaly (MGDA).

Case report

A 40 year old African-American woman with no visual complaints went to her local optometrist for a routine eye examination. At the optometrist's office she was told that “in the back of her right eye she had a dark spot with a ring around it” and was referred to a retinal specialist. The retinal specialist found a mildly decreased visual acuity and a “swollen disc” in the right eye and the patient was referred for neuro-ophthalmic consultation. To her knowledge, she previously had never had a dilated funduscopic examination.

Best corrected visual acuity was 20/30 distance and J1 near in the right eye and 20/20 distance and J1+ near in the left eye. There was a 0.9 log unit right relative afferent pupillary defect. Her colour vision, external
examination, slit lamp biomicroscopy, intraocular pressures, and motility were all normal in both eyes. Funduscopic examination was normal in the left eye with an optic nerve cup to disc ratio of 0.4. The appearance of her right optic nerve (Fig 1) was that of an elevated ring around the centre of the disc, interrupted from about 7 o’clock to 9 o’clock by an area of pigmentations. The vasculature was mildly obscured as it crossed the elevation. There was no venous engorgement, haemorrhage, cotton wool spots, or exudates. Funduscopic examination gave the appearance of a peripapillary excavation of retina and retinal pigment epithelium surrounding the optic disc and can be appreciated from about 12 o’clock to 7 o’clock.

Fluorescein angiography showed staining of optic nerve tissue but no leakage of fluorescein outside the disc margin, confirming the absence of true disc swelling (Fig 2). Magnetic resonance imaging of the brain and orbits with gadolinium showed no pathology. B-scan ultrasonography excluded optic disc drusen. Optical coherence tomography (OCT) of the optic nerve showed the elevated annulus of tissue seen on fundus examination and also showed a peripapillary excavation of the retinal pigment epithelium (RPE) adjacent to the optic nerve (Fig 3). This was thought to be most consistent with MGDA.

**Comment**

Morning glory disc anomaly is a congenital anomaly of the optic disc that is typically unilateral (for review see Brodsky’s). The majority of patients have a visual acuity between 20/200 and counting fingers in the affected eye, although cases with 20/20 vision and no light perception have been reported. It is more common in females than males and is less common in African-Americans than white people. This condition is not typically an inherited condition or part of a multisystem genetic disorder, although it has been reported as part of the renal-colooboma syndrome and trisomy 4q.

The term “morning glory syndrome” was coined for its ophthalmoscopic resemblance to the morning glory flower. In MGDA the optic nerve lies centrally within an excavation of the posterior globe. The size of the excavation varies from being relatively small, as in this particular case, to cases in which the excavation encompasses the macula, termed macular excavation. In most cases there is a central fibrous tuft that obscures the central part of the disc and a variable amount of peripapillary pigment. While MGDA is usually diagnosed by funduscopic examination alone, our case was atypical and not diagnosed immediately for several reasons: the patient had good visual acuity in the affected eye; she was African-American; there was no central fibrous tuft; and there was only a mild amount of peripapillary pigmentation. It is likely that our patient’s visual acuity was spared because of relative sparing of the papillomacular bundle (Fig 1). Indeed, the peripapillary annulus of tissue surrounding the optic nerve spared a small area temporally from about 7 to 9 o’clock. In this region there was some pigment disturbance, but little if any apparent fibrosis, compared to the rest of the optic nerve. While a previous study of eight patients’ suggested there was “no correlation between optic disc configuration and visual acuity” there was no patient in that study with a documented visual acuity better than 20/100.

Another atypical feature of our patient is the small amount of peripapillary pigment seen in the affected eye. The only area of pigmentation is between 7 and 9 o’clock. The remaining clock hours have elevated fibrovascular tissue but no visible pigment. This finding is not unexpected, as the visible peripapillary pigment in MGDA dissipates over time. This decrease in peripapillary pigment over time is believed to be secondary to a metaplasia of hamartomatous RPE into fibroglial tissue and hyperplasia of the fibroglial tissue. Our patient was 40 years old at diagnosis of MGDA and it is possible that she had more peripapillary pigment when she was younger, as the glial hyperplasia tends to progressively elevate the disc over time. This decrease is apparent on the late images shown of the patient’s right eye. Both early (left; 32.6 seconds after injection) and late (right; 6 minutes and 14 seconds after injection) images show no evidence of fluorescein leakage outside the disc margin.

MGDA is sometimes associated with a basal encephalocele and up to a third of patients with MGDA will develop a retinal detachment. Hence, the first step in the management of MGDA is recognising these associated conditions. Our patient did not have the characteristic facial features (flattened nasal bridge or cleft lip) nor did she have any neurological, endocrine, or respiratory symptoms to suggest she had a basal encephalocele and an magnetic resonance imaging confirmed its absence. Funduscopic examination showed no evidence of retinal detachment, and she will be followed carefully for this potential complication.

Although this is an atypical case, with no central fibrous tuft and little peripapillary pigment, this patient demonstrates the peripapillary excavation characteristic of MGDA. To our knowledge this is the first report of OCT of an eye with MGDA and confirms previous histopathological reports of MGDA showing RPE lining the central peripapillary excavation. Ongoing studies at our institution are using OCT to quantify the changes that occur with MGDA over time and to compare the features of MGDA with those of other optic nerve anomalies, including optic disc coloboma.
Acknowledgements

This manuscript was supported in part by a departmental grant (Department of Ophthalmology) from Research to Prevent Blindness, Inc, New York, New York, and by core grant P30-EY06360 (Department of Ophthalmology) from the National Institute of Health, Bethesda, Maryland. NJN is a recipient of a Research to Prevent Blindness LEW Wasserman Merit Award.

Some of the data in this paper have been previously published in abstract form at the Association for Research in Vision and Ophthalmology (ARVO) annual conference in 2002.

C A Baer, T M Aaeberg Sr
Department of Ophthalmology, Emory University School of Medicine, Atlanta, GA, USA

N J Newman
Department of Ophthalmology, Neurology, and Neurological Surgery

Correspondence to: Nancy J Newman, MD, Neuro-ophthalmology Unit, Emory Eye Center, 1365 Clifton Road, NE, Atlanta, GA 30322, USA; ophtnjn@emory.edu

Accepted for publication 5 July 2002

References


Idiopathic anterior hyaloid vessels

Anterior hyaloid fibrovascular proliferation (AHFP), the growth of vessels across the anterior hyaloid face from an origin in the anterior retina, was first described in phakic eyes after diabetic vitreoretinal surgery, but also reported following cataract surgery in diabetics. Complications include cataracts, vitreous haemorrhage, tractional retinal detachment, ciliary body detachment, and phthisis bulbi. We present the first report of this entity occurring in a non-diabetic patient without previous ophthalmic surgery.

Case report

A 20 year old Asian man presented with acute right sided visual loss. There was no history of ocular trauma or family history of note. He was systemically well. Visual acuity was 6/12 right eye, 6/5 left. Vessels were visible on the right posterior lens capsule, associated with localised cataract and anterior vitreous opacity (Fig 1A). Clinical examination revealed no other ocular abnormality, but the temporal periphery of the right retina was obscured. Anterior segment fluorescein angiography confirmed perfusion of the vessels (Fig 1B). Posterior segment fluorescein angiography was of poor quality in the right eye and revealed no fundus or peripheral abnormality in the left eye. Fluorescein angiography of the patient’s only surviving parent was normal. Fasting blood glucose, Tiusara/Toxoplasma serology, haemoglobin electrophoresis, and skull/chest radiographs were normal. Doppler studies indicated a probable feeder vessel derived from anterior retina but no evidence of tumour or other pathology (Fig 2).

Progressive cataract reduced visual acuity to 6/24 within 2 weeks of presentation. Phacoemulsification surgery was performed, followed by closure of the abnormal vessels with krypton laser (568 nm). Nd:YAG capsulotomy was performed 6 weeks after surgery. Two weeks later, fibrous anterior uveitis and vitritis developed which resolved with topical steroid medication. A year later, vessels persisted in the rolled capsular edge, and opacification of the anterior hyaloid necessitated Nd:YAG laser discission. Two and a half years after presentation, he is asymptomatic with 6/9 visual acuity in the right eye.

Comment

In most instances of retinal neovascularisation, an angiogenic stimulus, such as capillary non-perfusion or inflammation, can be identified. In this case, no evidence was found of capillary non-perfusion, or any, other than post-surgical, was identified in anterior or posterior segment, and visible pars plana appeared normal. Toxara and Toxoplasma serology was negative. There was no visible peripheral retinal vasculitis or systemic evidence of sarcoidosis or multiple sclerosis. No evidence of ocular trauma was found, and no foreign body was identified radiographica- lly. The patient is not diabetic, screening for haemoglobinopathy was negative, and there were no ophthalmoscopic or angiographic signs of retinal vascular occlusion. No evidence of a hyperviscosity syndrome was found.

The patient’s age, sex, and race are typical of patients suffering from idiopathic peripheral vaso-occlusive retinopathy (Eales’ disease), but the absence of retinal vasculitis, vitreous and retinal haemorrhage, and the unilateral nature of disease, are less characteristic. No sign of tumour was apparent on ultrasonogra- phy, and no evidence of arteriovenous malforma- tion was found in the eye or body. He had

Figure 1 Right eye. (A) Abnormal vessels on temporal aspect of posterior capsule associated with localised cataract and anterior vitreous opacity. (B) Anterior segment fluorescein angiography confirming perfusion of vessels.
Iris pigment epithelial cyst induced by topical administration of latanoprost

Latanoprost is an ester prodrug analogue of prostaglandin F₂₅ that enhances uveoscleral outflow and reduces intraocular pressure. Several adverse side effects associated with topical administration of latanoprost have been described. Iris cyst can be primary or secondary; the secondary iris cysts are usually caused by trauma, intraocular surgery, inflammation, and prolonged use of strong mydriatic agents, etc. We report one female patient, with advanced chronic angle closure glaucoma. She was treated with latanoprost for a longer time, an iris cyst developed in her left eye about 9 months after topical administration of latanoprost. The iris cyst in our case took more time to develop and a longer time to disappear than previously reported. We propose that it took more time to develop an iris cyst after topical administration of latanoprost, it would need more time for the iris cyst to regress.

Paravertebral primitive neuroectodermal tumour presenting with Horner’s syndrome

We describe a peripheral primitive neuroectodermal tumour (PPNET) arising from the cervical paravertebral region of a 34 year old woman, who presented with Horner’s syndrome and a cervical radiolucent tumour. PPNETs are rare malignant small round cell tumours. This appears to be the first documented case of localised PPNET with Horner’s syndrome at initial presentation.

Iris pigment epithelial cyst was found at the posterior iris surface through a mid-dilated pupil (Fig 1). Latanoprost was then discontinued and her antiglaucomatous medication was changed to dorzolamide and B blocker twice a day in both eyes. The iris cyst gradually decreased in size and completely disappeared from the pupil margin in February 2002 (Fig 2). During the follow up period of 4 months, there have been no visual complications or signs of recurring cyst.

Comment

Our report demonstrates another case of rare adverse side effects of latanoprost involving the iris. Although no ultrastructural biomicroscopy was used to follow up this case, the slit lamp biomicroscopy strongly suggested that the patient had a secondary pigment epithelial cyst arising from the posterior surface of the iris. The iris cyst developed in her left eye about 9 months after topical administration of latanoprost in her both eyes, and it progressively decreased in size and completely disappeared 5 months after topical latanoprost was discontinued. The iris cyst in our case took more time to develop and a longer time to disappear than previously reported. We propose that it took more time to develop an iris cyst after topical administration of latanoprost, it would need more time for the iris cyst to regress.

The topical latanoprost was administered to her both eyes, but only her left eye developed the iris cyst. We propose that both her eyes might have different sensitivity to the development of an iris cyst when exposed to topical latanoprost. (If her right eye was exposed to latanoprost for a longer time, an iris cyst might occur later.) Although cysts of uveal tissue might occur after uveitis, no definite symptoms and signs of uveitis were noticed in our patient during the follow up period. The most likely cause of this adverse side effect may be the increasing uveoscleral outflow on topical use of latanoprost; increasing uveoscleral outflow leads to an enhanced aqueous flow through the ciliary muscle and the intracorneal space of the posterior iris. The iris cyst can occur at anytime during topical administration of latanoprost. Ophthalmologists should be aware of this possible rare side effect of topical administration of latanoprost.

References


References


PostScript
nerve root canal. Histology revealed a malignant round cell tumour consistent with a peripheral primitive neuroectodermal tumour (PPNET, Fig 2). Immunohistochemical studies demonstrated positivity for foci vimentin, cytokeratins, synaptophysin, and MIC-2, but were negative for GFAP (glial fibrillary acidic protein). S100, desmin, and the lymphoid markers LCA, CD3, and CD20. Staging investigations showed no evidence of metastatic disease and therefore the diagnosis of localised PPNET was made.

The patient received chemotherapy as primary treatment followed by radiotherapy and has been in remission since. A year later she was referred to our unit for correction of her left ptosis, and underwent left anterior levator resection with a satisfactory result. Four years following her initial diagnosis she remains free of recurrent disease.

Comment

Horner’s syndrome is caused by an oculosympathetic deficit to the pupilillodater and superior and inferior tarsal retractor muscles. It is manifest by upper lid ptosis, ipsilateral miosis, apparent enophthalmos due to lower lid (“upside down”) ptosis, and often facial anhidrosis. The presence of all these features in our patient, together with the left facial anhidrosis, was indicative of a preganglionic lesion, since the sympathetic facial sweat fibres branch distal to the superior cervical sympathetic ganglion and central neurological tract signs were absent.†‡ Preganglionic Horner’s syndrome is frequently associated with neoplasms of the pulmonary apex, mediastinum, or neck, as illustrated by the location of the PPNET seen in our patient (Fig 1B).

PPNET is a rare malignant small round cell tumour that can affect any age group but is thought to peak in adolescence, with no sex predilection.† The most common location is the thoracopulmonary region, followed by the head and neck. Extraosseous Ewing’s sarcoma is now considered a form of PPNET, through immunohistochemical, ultrastructural, and histogenetical similarities.‡ Both tumours express elevated levels of glycoprotein p30–32, a product of the MIC-2 gene, in a unique and highly selected fashion, as well as specific translocations involving a gene on chromosome 22q12. Indeed, the tumour cells of our patient exhibited immunohistochemical reactivity for MIC-2, consistent with a PPNET.

The association of Horner’s syndrome with PPNET is rare, and has been seen in only a few reported cases. Clinical presentation is therefore helpful in diagnosing this rare tumour.

Figure 1  (A) Left Horner’s syndrome with left upper lid ptosis, miosis, and “upside down” lower lid ptosis. (B) Magnetic resonance imaging of neck (coronal section), showing a mass arising from between the first and second thoracic intervertebral foramen, extending into the root of the left side of the neck and the left pulmonary apical region (arrow).

Figure 2  Histology of excised cervicothoracic extradural mass taken January 1998 showing (A) round tumour cells with numerous frequent mitoses infiltrating fibrovascular stroma (haematoxylin and eosin ×140); (B) immunohistochemical reactivity of tumour cell cytoplasm with vimentin stain (Dako Ltd, UK; 1:40); (C) focal cytoplasmic dot-like staining with synaptophysin immunohistochemistry (arrowheads) (Dako Ltd, UK; 1:100).

Association of keratoconus and Avellino corneal dystrophy

Keratoconus is an idiopathic, progressive, non-inflammatory ectasia of the axial cornea. Its association with other systemic disorders or ocular disease have been reported, but its specific origin remains unknown. Recently, Münier and associates detected that four types of autosomal dominant corneal dystrophy result from mutation in the human transforming growth factor β induced gene (BtgIII), the product of which has shown to be the protein keratoepithelin (R535W for granulocorneal dystrophy, R535Q mutation for Reis-Bückler’s corneal dystrophy, R1246Q for lattice corneal dystrophy type I, and R124H mutation for Avellino corneal dystrophy). Molecular genetic analysis of various corneal dystrophies which have previously presented an insuperable challenge to clinical diagnosis, now clearly demonstrates the distinct phenotypes. We report a rare case of bilateral keratoconus in association with Avellino corneal dystrophy diagnosed by molecular genetic analysis.

Case report

A 35 year old man had complained blurred vision in both eyes for several years. His general health was good and there was no history of atopic disease, connective tissue disease, or ocular trauma. His familial history was unknown. His best corrected visual acuity was RE 20/20 and LE 20/100. Slit lamp examination revealed bilateral non-inflammatory corneal thinning with protrusion of the central thinning areas. Fleischer ring was found in both corneas. Central corneal thickness was 428 µm on the right and 421 µm on the left measured by ultrasonic pachymetry. There was also clinical evidence of granulocorneal dystrophy in both eyes. Discrete grey-white opacities and star-shaped stipilar opacities

Acknowledgement

We thank Dr Maria Thom, MRC Path, Division of Pathology, Institute of Neurology, London, for her assistance and permission in the preparation of pathological figures.

References


56

www.bjophthalmol.com
There is only one case report in the literature of a patient with keratoconus associated with Avellino corneal dystrophy. Sassani and associates reported the bilateral association of keratoconus and Avellino corneal dystrophy, which was diagnosed histopathologically. On the other hand, there are five reports with keratoconus associated with granular corneal dystrophy. However, those cases were diagnosed clinically, not histopathologically or genetically. A clinical diagnosis of the different types of corneal stromal dystrophy is difficult, especially for granular corneal dystrophy and Avellino corneal dystrophy. Some cases previously reported as granular corneal dystrophy might be actually cases of Avellino corneal dystrophy.

The involvement of genetic factors has been reported in keratoconus, but its hereditary pattern was not identified. A gene for at least one form of hereditary keratoconus has been mapped to human chromosome 21. In our case, it is unclear whether a genetic factor had a role in the simultaneous development of keratoconus and Avellino dystrophy. There may be some linkage between the genes responsible for these two abnormalities. In our case, molecular genetic analysis clearly demonstrated the presence of distinct phenotype, which had not previously been presented clinically.

The authors have no proprietary interest in any aspects of this work.

S Igarashi
Department of Ophthalmology, Asahikawa Medical College, Asahikawa, Japan

Y Makita
Department of Public Health, Asahikawa Medical College, Asahikawa, Japan

References
potential of vitronectin using an in vivo
role in the accompanying corneal NV.
involved in the aetiologies of other age related
diseases. such as age related
related human diseases such as age related
mal extracellular deposits in various age
molecule, is often a component of the abnor-
multifunctional extracellular matrix adhesion
ary for new blood vessel growth,
around the deposits. Substantial levels of vit-
(USA) exhibited intense reactivity with the
gelatinous drop-like dystrophy (GDLD),
right cornea of a 39 year old man. Histological section of this
cornea shows eosinophilic amorphous
material in the subepithelial region, and the
overlying epithelium was degenerated. Note
the prominent inflammatory infiltrate
(haematoxylin and eosin, original
possibility that this might represent an edge
staining for vitronectin is also found in the
deposits. Anti-vitronectin also appears to
stain the superficial layer of corneal epithelial
cells, although we cannot totally rule out the
possibility that this might represent an edge
artefact (haematoxylin counterstain, original
Magnification x200).

It was recently reported that vitronectin, a
multifunctional extracellular matrix adhesion
molecule, is often a component of the abnor-
mal extracellular deposits in various age
related human diseases such as age related
macular degeneration and amyloidosis. This
suggested that similar pathways may be
involved in the aetiologies of other age related
diseases. Because the disease state of GDLD
deteriorates with age, we hypothesised that
similar vitronectin related pathways may also
be associated with GDLD, and examined
whether vitronectin was expressed in the
GDLD cornea by immunohistochemistry.
An antibody directed against vitronectin
(Santa Cruz Biotechnology, Santa Cruz, CA,
USA) exhibited intense reactivity with the
infiltrating leucocytes and corneal epithelium
around the deposits. Substantial levels of vit-
ronectin protein were also present in the
deposits (Fig 1B, C).

Because the production of new extracellu-
lar matrix proteins has a crucial role in
supporting cell proliferation that are neces-
sary for new blood vessel growth,4 and
because vitronectin receptors, such as integrin
αvβ3 and αvβ5, are involved in angiogenesis,5
we further hypothesised that the accumulated
vitronectin in the GDLD cornea may also have
a role in the accompanying corneal NV.

We therefore examined the angiogenic
potential of vitronectin using an in vivo
conical assay. Five µl hydron pellets (Inter-
feron Sciences, New Brunswick, NJ, USA)
containing 1 µg of mouse vitronectin (Invitro-
gen, Carlsbad, CA, USA) were implanted into
the cornea of anaesthetised male Sprague-
Dawley (S-D) rats and, after 7 days, the
animals were killed, and the corneal vessels
were photographed. Vitronectin elicited a
strong angiogenic response, but administra-
tion of phosphate buffered saline (PBS) alone
did not (Fig 2).

Comment
These results provide the first evidence for the
expression of vitronectin in the cornea with
GDLD, and for the in vivo induction of angio-
genesis by vitronectin. The results indicate
that vitronectin may have a role in corneal NV
in patients with GDLD. Therefore, further
studies exploring mechanisms of corneal NV
mediated by vitronectin/integrin system, and
how mutation of MISO leads to accumulation
of vitronectin with more samples, may even-
tually offer a novel insight in understanding
the aetiology of corneal NV associated with
GDLD.

Acknowledgements
This work was supported in part by grants from
Sumitomo Life Social Welfare Services Foundation
(SY), Japan National Society for the Prevention
of Blindness (AY), and Japan Eye Bank Association
(AY).

S Yoshida, A Yoshida, T Ishitashi
Department of Ophthalmology, Kyushu University
Graduate School of Medicine, Fukuoka,
812–8582, Japan

Y Kumano, T Matsui
Ohshima Hospital of Ophthalmology, Fukuoka,
812–0036, Japan.

Factor XII deficiency and
recurrent sixth nerve palsy

Factor XII deficiency is associated with
thrombosis.1** Severe deficiency increases an
individual’s prothrombotic tendency but with
mild reduction in levels there is less certain.6 We present a case of recurrent sixth cranial nerve palsy due to severe factor XII deficiency. To our knowledge, this is the first reported case of a recurrent cranial nerve palsy associated with factor XII deficiency.

Case report
A 58 year old white male presented with an
acquired constant incomitant horizontal di-
plopia. He had had a previous episode of hori-
zontal diplopia of 3 weeks’ duration 6 months
previously with spontaneous resolution and a
further similar episode 18 years before that
but had been otherwise well. He was not
hypertensive or diabetic, of normal weight
and a smoker, and without any cardio-
vascular disease. There was no family or
personal history of venous or arterial throm-
osis. On examination he was found to have
bilateral sixth nerve palsy without any asso-
ciated headache or papilloedema. Detailed
magnetic resonance imaging with contrast
and lumbar puncture opening pressure and
investigation was normal.

Owing to the recurrent nature of the nerve
palsy and the initial young age of presenta-
tion, a further prothrombotic examination
was undertaken. Laboratory investigations
showed a normal full blood count, plasma vis-
cosity, liver function tests, glucose, homo-
cysteine, prothrombin time, and fibrinogen
assay. There was a significantly prolonged
activated partial thromboplastin time of 74.7
seconds (normal range 24–32), which was
still abnormal on repeat testing (90 seconds).
Further laboratory studies demonstrated se-
vere factor XII deficiency which was consist-
ent on repeated testing (<1% of normal
levels) but otherwise normal levels of protein
S, protein C, antiphospholipid antibodies, fac-
tor VIII, von Willebrand factor, and the factor
V Leiden mutation or prothrombin G20210A
allele were not found.

References
1 Smolin G. Corneal dystrophies and
2 Yoshida S, Kumano Y, Yoshida A, et al. Two
brothers with gelatinous drop-like dystrophy at
different stages of the disease: role of
3 Mullins RF, Russell SR, Anderson DH, et al.
Drusen associated with aging and age-related
macular degeneration contain proteins
common to extracellular deposits associated
with atherosclerosis, elastosis, amyloidosis,
4 Stupack DG, Cheresh DA. ECM remodeling
regulates angiogenesis: endothelial integrins
5 Yoshida S, Ono M, Shono T, et al.
Involvement of interleukin-8, vascular
endothelial growth factor, and basic fibroblast
growth factor in tumor necrosis factor
alpha-dependent angiogenesis. Mol Cell Biol

Correspondence to: Shigeko Yoshida, MD, PhD,
Department of Ophthalmology, Kyushu University
Graduate School of Medicine, Fukuoka, 812–582,
Japan; usyosi@yahoo.com

Accepted for publication 12 August 2002
He was fitted with Fresnel prisms to relieve his diplopia and was followed up 3 weeks later. By that time his diplopia had completely resolved and he had full abduction in both eyes.

Comment

With this recurrent and resolving pattern of cranial nerve palsy in a patient with no other risk factors for arteriosclerosis and a normal magnetic resonance imaging and lumbar puncture, the most likely predisposing factor in this case is his prothrombotic state associated with severe factor XII deficiency.

Severe factor XII deficiency is a genetic determinant for thrombosis. It is not associated with any other clinical manifestations and prolonged activated thromboplastin time is a consistent finding in any level of factor XII deficiency. The only previously reported ophthalmic complications of factor XII deficiency are two cases of central retinal vein occlusion in patients without any vasculopathic risk factors. Assay for factor XII is not routinely done on thrombophilia screening protocols. It has been suggested that the frequency of factor XII deficiency (1.5–3%) is high enough to warrant the inclusion of factor XII assays in routine thrombophilia screening. Detailed thrombophilia screening of healthy populations may produce an identifiable abnormality in 10% but clearly 10% of the population are not clinically affected in their lifetime. Therefore the need for additional management should be assessed according to the presence of concurrent risk factors in an algorithmic fashion. Since his cranial nerve palsy resolved quickly and there was no family history of vascular thrombosis he was treated empirically with aspirin and although there is no evidence to support its benefit in this condition.

A Kipioti, O C Backhouse, P M Jacobs, M R Howard
Department of Ophthalmology, York District Hospital NHS Trust, York, UK
Correspondence to: A Kipioti, Eye Department, Clarendon Wing, Leeds General Infirmary, LS2 9NS, UK, tknkipioti@doctors.org.uk
Accepted for publication 12 August 2002

References

4 Zeerleder S, Schloesser M, Redondo M, et al. Thyroid disease and the development of thyroid ophthalmopathy are described because of their temporal relation to thyroid disease. Both cases were seen at the department of ophthalmology of the University Hospital Groningen, Netherlands.

Case 1

A female patient born in 1922 became hyperthyroid with minimal eye signs with possibly some lid retraction in 1948. She was treated by thyroidectomy and became clinically euthyroid. In 1980 she developed Graves’ ophthalmopathy (GH) although the temporal relation to thyroid disease is not consistent. It has been estimated that 77% of GH patients have hyperthyroid, 21% euthyroid, and 2% hypothyroid.7 The mean absolute interval between GH and GO is 3.3 years in men and 3.6 years in women. Two thirds of patients present with orbital symptoms within 18 months of diagnosis of thyroid disease.

The following cases of Graves’ ophthalmopathy are described because of their unusual presentation: a long interval between thyroid disease and the development of predominantly unilateral Graves’ ophthalmopathy. Both cases occurred at the department of ophthalmology of the University Hospital Groningen, Netherlands.

Case 2

A male patient born in 1944 was diagnosed with hypothyroidism in 1979. Thyroid hormones were abnormal. FT4 was decreased, TSH was increased, antibodies against colloid were positive, and APCA and TPO antibodies were negative. Because of this primary hypothyroidism levothyroxine therapy was started and he gradually became euthyroid. His ophthalmic examination mentioned a disorder of the central retinal pigment epithelium and glaucoma which was treated with timolol.

In August 2000 he presented with unilateral proptosis and progressive loss of vision. Ocular examination showed chemosis and oedema of the eyelids in both eyes. Visual acuity was 20/60 right eye and 20/30 left eye. Papillary reflexes were normal and symmetrical. Clinically and biochemically he presented as euthyroid. A CT scan showed bilateral enlargement of the eye muscles, more marked on the right side. He was treated with 60 mg prednisone daily.

One month later visual acuity of the right eye dropped further and he was referred to our hospital. Ocular examination showed marked soft tissue signs, worse in the right eye, bilateral chemosis, and unilateral exophthalmus of 26 mm in the right eye. Visual acuity was reduced to 20/30 in the right eye. Colour vision was diminished and there was a relative afferent pupillary defect in the right eye. He had restrictions of the eye movements of the right eye when looking upwards, downwards, and in addition. Thyroid hormone levels were again within normal ranges. He was admitted and methylprednisolone 250 mg four times a day intravenously and radiotherapy (10 X 2 Gy) were started. Antibody testing showed borderline thyroglobulin and TPO antibody titres. Results of TSH receptor antibody testing could not be traced.

As visual function was not restored within a reasonable time another CT scan was performed which showed enlargement of all recti muscles of right eye and in lesser extent of the left eye with signs of compression of the right optic nerve. An orbital decompression through a Caldwell-Luc approach was performed on the right side. Postoperatively, visual acuity of the right eye improved to 20/30 and proptosis in the right eye was reduced by 8 mm. A strabismus convergens of the right eye was the main side effect.

In April 2001 a bilateral medial recession and a recession of the inferior rectus of the right eye were performed to treat the strabismus convergens. Binocular single vision was achieved in the primary position with some diplopia at extremes of gaze.

Comment

Unilateral proptosis as a result of Graves’ disease cannot be rejected as a diagnosis, even 20 or 30 years after the onset of thyroid disease. Only one retrospective study mentioned intervals up to 25 years without giving exact numbers and underlying thyroid disease. For hypothyroidism and GO one study suggests intervals exceeding 15 years.8

Thyroid hormone testing should be performed to rule out abnormalities in thyroid hormone levels although thyroid status does not seem important as the active phase of ophthalmopathy may occur during hyperthyroidism, hypothyroidism, and euthyroidism.9 Thyroid antibody testing may be supportive for the diagnosis. A CT scan can be essential in further analysis showing enlargement of extraocular muscles with sparing of the tendons. It is also known that a CT scan can demonstrate contralateral eye muscle involvement in 50–90% of patients with clinically unilateral eye disease.10

Our two patients illustrate that the medical history is important in evaluating proptosis. One should always think of Graves’ disease as a possible cause of unilateral exophthalmos even though a patient may have had thyroid disease more than 20 years earlier.
Unusual presentation of cat scratch disease in HIV+ patient

Intraocular cat scratch disease may present with different clinical features including neuroretinitis, retinitis, retinal infiltrates, arterial and vein occlusions. Most of the cases show spontaneous recovery without therapy.1

There are only few reports of intraocular cat scratch disease in HIV+ patients. We report an unusual case of cat scratch disease presenting as helioid unifocal choroiditis in an HIV+ patient that showed good response to systemic therapy.

Case report

A 30 year old homosexual HIV+ man was referred to the uveitis department complaining of blurred vision in the left eye. He was taking zidovudine, lamivudine, ritonavir, and saquinavir. His last CD4+ count was 128 cells/µl and viral load 1,300,000.

His visual acuities were 6/6 in the right eye and counting fingers in the left. There was no inflammation in the anterior chambers or in the vitreous. Ophthalmoscopy revealed a yellowish choroidal lesion surrounded by fluid and haemorrhages in the macula of the left eye (Fig 1). Fluorescein angiography showed an angiomatosus lesion corresponding to those seen clinically. Blood tests were ordered including VDRL, toxoplasmosis serology, Lyme disease serology, ELISA for toxocariasis and were all negative. Computed tomography (CT) scan and serum studies were unremarkable. Blood sample was sent to CDC Atlanta for Bartonella serology. Since clinical diagnosis was cat scratch disease and most patients show good recovery without treatment we decided not to treat before results of blood tests. We kept examining the patient every week with ophthalmoscopy and fluorescein angiography (Fig 2A, B). The lesion progressively increased in size but he did not show visual acuity deterioration.

A month after presentation the lesion had increased and four small lesions appeared in the right eye. His visual acuity dropped to hand movements. Although we did not have the results of Bartonella serology, we decided to give him ciprofloxacin. Bartonella henselae serology was positive for IgG, 1:256, and IgM negative.

Fifteen days after treatment was started the lesions in the right eye disappeared and the macular lesion in the left eye resolved completely.

Comment

There is a well established association between neuroretinitis and cat scratch disease although many different clinical presentations have been described.1 Ormerod et al1 described two patients with small areas of retinitis and arteriolar occlusions. Pollock and Kristinsson1 described one patient with cat scratch disease and helioid unifocal choroiditis. Hong et al2 first described this syndrome when they reported six young patients with a solitary round yellow chorioretinal lesion associated with subretinal fluid. There was no association with inflammatory or infectious diseases. Fish et al3 reported a case of peripapillary angiomatosis associated with neuroretinitis. Our patient presented with clinical features of helioid unifocal choroiditis but after angiogram we could see an angiomatous-like lesion.

The treatment of ocular cat scratch disease remains controversial. Pollock and Kristinsson1 reported a case that improve- ment in visual acuity from 6/12 to 6/6 occurred after 3 weeks without treatment. One of the cases described by Ormerod showed some benefit after treatment although his recovery was very slow. The second patient showed improvement without treatment. Warren et al4 reported an HIV+ patient with cat scratch disease whose lesion enlarged without treatment. Once the diagnosis of Bartonella was confirmed by polymerase chain reaction of the retina sample, the patient was started on systemic antibiotics with good results. Considering that spontaneous recovery could occur we decided not to treat until our patient showed deterioration in the left eye and involvement in the fellow eye.

Ophthalmologists should be aware of this unusual presentation of cat scratch disease with helioid unifocal choroiditis and angiomatosus-like lesions. Although larger series and control studies are needed, HIV+ patients with intraocular manifestations of cat scratch disease may benefit from systemic treatment with antibiotics.

A L L Curi, W R Campos, L Barbosa, M A Lana-Peixoto, F Oréfice
Federal Fluminense University/Federal University of Minas Gerais, Brazil

Correspondence to: Dr Andre Luiz Land Curi, R Francisco Dutra, 163/701 Ieari Niteroi, RJ, 24220/150, Brazil; curiall@yahoo.com

Accepted for publication 18 August 2002

References


Simultaneous translocation of the macula and underlying retinal pigment epithelium during macular transplantation surgery in a patient with long standing myopic neovascular maculopathy

Limited macular transplantation has been reported to be a promising treatment for some patients with choroidal neovascularisation.5,6 Although this technique has the advantage of being less invasive, there is documentation of
Various complications that have been experienced with its use. In this report, we describe an unusual complication associated with limited macular translocation in a patient with long standing choroidal neovascularisation.

**Case report**

A 35 year old woman was referred to our department because of a gradual decrease in visual acuity in her right eye. At the first visit, her best corrected visual acuity was right eye, 20/40, with a refractive error of −17.5 dioptres in the spherical equivalent. Clinical and angiographic examinations showed a juxtafoveal choroidal neovascularisation. During the subsequent follow up period, choroidal neovascularisation and surrounding retinal pigment epithelial atrophy gradually expanded and involved the subfoveal region (Fig 1A). We gave the patient detailed information on the available therapeutic options, including macular translocation, but she chose conservative follow up rather than surgical intervention. Three years after her first visit, the visual acuity in her right eye worsened to 20/100. At that time, the patient decided to have surgical treatment. With her consent, limited macular translocation was performed on her right eye, as described previously.

Postoperatively, fluorescein angiography showed an extrafoveal neovascular membrane with a foveal shift of 0.7 disc diameter (Fig 1B). Sharply demarcated hypofluorescence in the macular area was also demonstrated. Biomicroscopic examination revealed a slightly hyperpigmented lesion underneath the translocated macula, which corresponded to the area of hypofluorescence. A horizontal optical coherence tomography (Humphrey Systems, San Leandro, CA, USA) section taken through the translocated macula displayed highly reflective double layers (Fig 2A). These findings may indicate that the abnormal subfoveal retinal pigment epithelium, which adhered tightly to the overlying neurosensory retina, probably because of the long history of neovascular maculopathy, was translocated with the macula during surgery. Two reflective bands observed on an optical coherence tomography image may have corresponded to the native retinal pigment epithelium and abnormal retinal pigment epithelium translocated with the macula. Indocyanine green angiography findings supported this speculation (Fig 2B).

Despite sufficient foveal displacement, the patient’s visual acuity has not improved. During a follow up period of 15 months, it has remained at the same level as her preoperative vision.

**Comment**

In many eyes with choroidal neovascularisation, the macula can easily be separated from the subjacent fibrovascular tissue. In some eyes with long standing choroidal neovascularisation, however, the outer portion of neurosensory retina may adhere firmly to the subjacent tissue. In such cases, an inner portion of fibrovascular tissue may be torn off and translocated with overlying neurosensory retina during macular translocation. The underlying healthy retinal pigment epithelium covered with the translocated abnormal tissue may not be able to fulfill its physiological roles on the overlying neurosensory retina, and good functional recovery of the translocated macula is unlikely to be achieved. As documented here, simultaneous translocation of the underlying abnormal retinal pigment epithelium associated with long standing choroidal neovascularisation can occur during limited macular translocation and result in an unsatisfactory visual outcome. When patients are deciding whether to consent to surgical intervention with limited macular translocation in such cases, they should be informed of the benefits and risks of the treatment, with due consideration of this complication.

**References**


**Fungal and bacterial chronic endophthalmitis following cataract surgery**

Endophthalmitis, although rare, is one of the most vision threatening complication of cataract surgery. The majority of these infections...
are bacterial in the Western world. The occurrence of fungal endophthalmitis after cataract surgery is rare as well as polymicrobial infections. We report a case of chronic postoperative endophthalmitis caused by bacterial and fungal pathogenic agents.

Case report
A 73 year old woman was referred for pain and redness in the left eye. Her past history was remarkable for an extracapsular cataract extraction in the left eye with a posterior chamber intraocular lens implant that had been performed in Turkey in 1998. The patient had recurrent episodes of decreased vision and ocular pain in the postoperative course and was treated with peribular injections of corticosteroids over 2 years. On presentation, visual acuity was hand movements in the left eye. Slit lamp examination of the left eye showed a white corneal infiltrates involving the superior and nasal quadrant (Fig 1). There was a moderate anterior chamber reaction and a 1 mm hypopyon. The implant was in good position and no residual cortical material was seen. The vitreous showed 2+ cells. Intraocular pressure was normal. Examination of the right eye was normal except for a mild nuclear cataract. The diagnosis of chronic infectious endophthalmitis was suspected.

The aqueous cultures were sterile for bacteria and fungi. Intravitreal injection of vancomycin and amikacin were performed. Postoperatively, the patient was given intravenous ciprofloxacin, piperillin, and topical fortified midis and afternoon. The implant was in a good position and no residual cortical material was seen. The vitreous showed 2+ cells. Intraocular pressure was normal. Examination of the right eye was normal except for a mild nuclear cataract. The diagnosis of chronic infectious endophthalmitis was suspected.

Specimen of candida, other than Candida albicans, are normal flora of cutaneous and mucocutaneous surfaces and are only rarely incriminated as agents of clinical disease in immunocompetent hosts. Candida parapsilosis is in fact one of the most common fungi cultured from the normal human external eye. However, it can cause infectious crystalline keratopathy or, more typically, suppurative stromal keratitis. Candida parapsilosis has also been reported as a cause of small epidemics of postoperative endophthalmitis. In the present case, Candida parapsilosis could be considered as a true pathogenic organism because of its localization, in the capsular bag, and also because antifungal therapy was effective.

On the other hand, Staphylococcus and Corynebacterium species are frequently identified in postoperative endophthalmitis. This case is, to our knowledge, the first documented report of bacterial and fungal endophthalmitis following cataract surgery. The use of broad spectrum antibiotics, the administration of steroids, and the increased number of patients with local or systemic immunosuppression could explain the development of such infections which are frequent in post-traumatic endophthalmitis but extremely rare after cataract surgery. However, cross contamination by hospital personnel may also account for increase in yeast infections in certain environments. A recent survey of hospital personnel revealed that 70% of nurses and non-nursing hospital personnel carried yeasts on their hands, particularly subungual spaces, with Candida parapsilosis being those most frequently recovered.

This case demonstrates the atypical presentation and the poor prognosis of polymicrobial endophthalmitis. Identification of all the organisms is essential before the onset of therapy, emphasising the need for complete microbiological evaluation of any postoperative endophthalmitis.

T Bourcier, S Scheer, C Chaumeil, C Morel, B Borderie, L Laroche
Quinze-Vingts National Center of Ophthalmology, Paris, France
Correspondence to: Tristan Bourcier; bourcier@quinze-vingts.fr
Accepted for publication 28 August 2002

References


Surgical performance for specialties undertaking temporal artery biopsies: who should perform them?

We read with interest the paper by Galloway and colleagues which suggests that ophthalmologists are best suited to perform temporal artery biopsies. We recently completed a retrospective study of all the temporal artery biopsies performed at four teaching hospitals (Hammersmith Hospital, Charing Cross Hospital, St Mary’s Hospital and The Western Eye Hospital) in north London between January 1996 and January 2002. Ninety one patients underwent 92 biopsies. Of these, 15 were positive for temporal arteritis implying a 16% positive biopsy rate which is compatible with Galloway et al’s results. Ophthalmologists performed 54 biopsies (59%) while general and vascular surgeons (GVS) performed 38 biopsies (31%). Both groups had similar positive biopsy rates—ophthalmologists 10/54 (19%) and GVS 5/28 (13%). In an analysis of the ability to perform biopsies, the ophthalmologists had two failed biopsies (one specimen—no artery identified and one specimen—crushed artery) while the GVS group had one failed biopsy (no artery identified). The average artery length was 13.0 mm (range 5–21 mm) for the ophthalmologists and 14.0 mm (range 7–22 mm) for the GVS group.

We disagree with Galloway and colleagues’ assertions that ophthalmologists are best suited to performing temporal artery biopsies as our study found that both groups of
surgeons obtained similar lengths of artery and had similar positive biopsy rates. We note that in their study, while the vascular surgeons only performed two of the 41 biopsies, the average length of specimen obtained was 22.5 mm, thus suggesting that the vascular surgeons may well be the best group to perform these biopsies. In Charing Cross Hospital, the vascular surgeons routinely use a Doppler ultrasound probe to help detect and delineate the superficial temporal artery before biopsy and this practice has been advocated by other studies to help improve the yield of the biopsy. In our study, all the biopsies performed by ophthalmologists were done in extraorbital cases in theatre and seven cases had to be performed outside normal working hours as emergencies because of lack of theatre time. The fact that ophthalmologists performed 59% of biopsies may be due to the fact that all four hospitals had large neuro- logical and rheumatological units attached to them. We feel that both ophthalmologists and general and vascular surgeons are equally capable of performing temporary artery biopsies and that guidelines should be designed locally to decide who should perform the biopsies. More importantly, the follow up of these patients should be clearly stated and be ideally under the care of the rheumatologists.

K Fong, V Ferguson
The Western Eye Hospital, Marylebone Road, London NW1 3YE
Correspondence to: Dr Kenneth Fong; fongcslk@yahoo.co.uk

References

Major complications of endoscopic sinus surgery: a comment
We were pleased to read the informative article by Rene et al. The authors refer to “Onodi cells” as “aerated posterior ethmoid sinus cells, along the optic canal.” Could it be that they meant to refer to the cells as “Onodi cells”? Onodi described a number of variations of posterior ethmoid anatomy. Endoscopic sinus surgeons refer to the pattern of extramural pneumatization of the ethmoid lateral or superolateral to the sphenoid, where the posterior ethmoid is indented by the optic canal, as an Onodi cell. More recently it has been suggested that this cell is better characterised as a “sphenoehtmoidal cell.” The main significance of the Onodi or sphenoehtmoidal cell is that while sinus surgeons expect to find the optic nerve in the sphenoid sinus, they are not routinely looking for it in the posterior ethmoid. Consequently, the chance of iatrogenic injury is likely to be higher in patients with Onodi cells and even higher in patients with extensive pneumatised Onodi cells. The exact incidence of Onodi cells is unclear. Endoscopic dissection studies suggest an incidence as high as 59% or 42%. CT imaging studies suggest a lower incidence of 7%. Driben et al. feel that the likelihood of a sphenoehtmoidal cell increases with increasing obliquity of the anterior sphenoid wall. Racial factors may also have a role as Onodi cells appear to be more common in Asian patients.

Every effort should be made to identify sphenoehtmoidal cells preoperatively and to be aware of intraoperative clues such as anterior sphenoid wall alignment, which may point to the presence of an Onodi cell. Attention to these important details will increase the likelihood of uncomplicated endoscopic sinus surgery at the sphenoehtmoidal junction.

S M Graham
Department of Otolaryngology Head and Neck Surgery
K D Carter
Oculoplastic and Orbital Service, Department of Ophthalmology and Visual Sciences, University of Iowa, Iowa City, IA, USA.

Correspondence to: Scott M Graham, MD, University of Iowa Hospitals and Clinics, Department of Otolaryngology Head and Neck Surgery, 200 Hawkins Drive, 21201 PFP, Iowa City, IA 52242–1093, USA; scott.graham@uiowa.edu

References

Trabeculectomy augmented with antimetabolites with a viscoanastomosis technique for the management of open angle glaucoma
In a small randomised, prospective study, O’Brart and co-workers attempted to prove that trabeculectomy (n=25) provided better intraocular pressure (IOP) control than viscoanastomosis (n=23). However, we have serious concerns about the methodology of this study that need to be addressed. Intraoperative antimetabolite injection of viscoelastic into Schlemm’s canal is characterised by the injection of viscoelastic into Schlemm’s canal. However, this was not performed in half of the patients randomised to this group. This would be as inappropriate as using an antimetabolite in only half the patients in the trabeculectomy group, and then comparing this entire group to the viscoanastomosis group. Although the authors do state that the subgroup of patients with intracanalicular viscoelastic injection was inferior to trabeculectomy, this cohort consisted only of 12 patients and it is not known how many had complete follow up after 18 months. Surely, these small numbers are insufficient to draw such conclusions.

We are also concerned that the use of intraoperative antimetabolites in the trabeculectomy group added a major confounding variable in this study. This is particularly perplexing as the authors’ viscoanastomosis technique primarily relied on subconjunctival filtration, as evidenced by their scleral flap design and loosur suturing technique in which only three 10/0 nylon sutures were used. Furthermore, their excellent early success rate of viscoanastomosis (95% at 6 months), the presence of filtering blebs in their successful viscoanastomosis procedures, the lack of one in their failures, and the need for postoperative bleb needling and 5-fluorouracil injections all argue against the use of mitomycin-C and 5-fluorouracil improving the success rate of glaucoma filtering surgery by reducing episcleral fibrosis, and probably explains the difference in success rates in this study. We wonder what the results would have been had the use of intraoperative antimetabolites been used in all groups, or if none was used at all. In contrast with the authors’ technique, we employ Stegmann’s approach to viscoanastomosis in using a parabolicscleral flap secured tightly with five sutures in a relatively watertight fashion. Although such blebs may develop, most patients achieve IOP lowering through multiple alternate pathways including uveoscleral, through Schlemm’s canal, and subconjunctival. Certainly in high risk cases, we feel that there is a role for antimetabolites in non-penetrating surgery, and we have found it to be safer than when used with trabeculectomy. It should be mentioned that quite often we do rely on subconjunctival filtration in non-penetrating procedures (that is, deep sclerectomy) but advocate the use of a collagen wick or hyaluronic acid implant with an intraoperative antimetabolite in higher risk cases to obtain optimal IOP control.

Fibrosis and loss of permeability of the trabeculo-Descemet’s window (TDW) is a well described cause of postoperative elevation in IOP after non-penetrating glaucoma surgery. Postoperative ND:YAG goniosynechotomy of the TDW in these cases is a relatively easy adjunctive procedure and may be needed in up to 41% of non-penetrating procedures. It has been reported to successfully lower the postoperative IOP in over 80% of cases. Yet, we are dismayed that the authors decided not to attempt laser goniosynechotomy in those viscoanastomosis cases with postoperative IOP elevations because “such interventions clearly convert a ‘non-penetrating’ technique into a penetrating, full thickness procedure.” We vehemently disagree with this line of reasoning as we feel goniosynechotomy is an extremely useful adjunctive procedure and converting to a penetrating (not “full thickness”) procedure in the safety of the controlled postoperative period is completely reasonable. This is akin to suture lysis in trabeculectomy. The authors feel that performing suture lysis constitutes conversion of a guarded trabeculectomy into a full thickness unguarded trabeculectomy and thus cannot be fairly compared to the former. Although goniosynechotomy performed in only three eyes at 18 months, we wonder what results would have been obtained if this was done in all cases with uncontrolled IOPs at any point in the postoperative period. Although we are critical of this study, we applaud O’Brart and colleagues for attempting to investigate this evolving area of glaucoma surgery. Although they may have shown that trabeculectomy with the use of an antimetabolite is superior to a modified form.
of viscocanostomy dependent on subconjunctival filtration without the use of an antimetabolite, this study unfortunately does not fairly compare the efficacy of Stegmann’s viscocanalostomy technique versus trabeculectomy. Non-penetrating glaucoma surgery has achieved an improved safety profile and surely as future well designed controlled studies become available, the efficacy of these procedures compared to trabeculectomy will become clearer.

I K Ahmed, C Krannemann
University of Toronto, Toronto, Ontario, Canada

Correspondence to: I K Ahmed, 43 Bywood Drive, Toronto, Ontario M3A 1M1; ike.ahmed@utoronto.ca

References

Argon laser and trichiasis

We were interested to read the approach taken by Sahni and Clark to facilitate the effective argon laser treatment of trichiasis. They have ably reviewed the complications of trichiasis, the different forms of management of trichiasis, the advantages of argon laser treatment in the management of trichiasis, the technique of argon laser trichiasis therapy, and the limitations of laser lash therapy.

We take issue with the authors in two areas. Firstly, the almost certain consequence of using a duration of laser treatment of 0.1 second is that if the laser “takes,” the lash will disappear within the space of a few laser shots, effectively precluding the destruction of that particular lash follicle. We have particularly made it a point that when teaching trainees the technique of laser lash, we ensure that the energy burst lasts long enough to commence visible lash destruction as well as destruction of the subcaneous tissue. We have therefore always used a duration of at least 1 second, effecting the destruction of the lash follicle above the lid level after the first shot, or certainly within three shots. Thus, 1–3 second duration bursts may be required, depending on the individual lash. Just a few more shots will effectively and completely destroy the subcaneous lash and its follicle.

Secondly, the article by Bartley and Lowry quoted by the authors, describes using a “drop of ink from a fountain pen” to facilitate lash laser. Presumably in the interests of sterility, Sahni and Clark have used the ink from a “blue skin marker pen” to allow improved absorption of argon laser energy. While use of a fresh marker pen for each patient may be relatively efficient, it could not be regarded as cost effective. By contrast, in a procedure described by us, we have found that transferring a tiny drop of the patient’s own blood, whether still liquid or already coagulated, to the lash base on the lid margin is a simple, rapid, cheap, safe, and highly effective method of getting the laser reaction started when the lashes are pale. We have found that the required amount of blood is invariably present on the patient’s own lid skin at the site of local anaesthetic infiltration. We usually transfer it by picking it up with a sterile drawing up needle. This is achieved remarkably easily on the laser slit lamp, which allows adequate magnification for the accurate siting of the transferred blood.

G A Wilcek, I C Francis
The Ocular Plastics Unit, Prince of Wales Hospital, and the University of New South Wales, Randwick, Sydney, Australia

Correspondence to: Ian C Francis; iif@student.unsw.edu.au

References

Management of age related macular degeneration: still room for improvement

The aim of Mitchell et al’s study in collaboration with the Macular Disease Society (MDS) was to assess the perceived quality of health care of people with macular disease in the United Kingdom. The first of two surveys was performed in 1999 and took the form of a retrospective audit by postal survey of 2000 members of the MDS. I performed a similar but smaller study in collaboration with the MDS 7 years earlier.1 This took the form of a retrospective audit by postal survey of 200 members of the MDS. The aim was to assess the clinical management of patients with age related macular degeneration (ARMD) in the United Kingdom from the patients’ perspective. The final response rate was 79% (similar to 77% of Mitchell et al) and patients had attended over 105 ophthalmic units throughout the United Kingdom. Mitchell et al omitted this early study from their discussion but comparison of the two studies raises some noteworthy points.

The prevention1 and treatment2 of ARMD remains far from ideal both for the majority of patients and their ophthalmologists. Members of the MDS are likely to be a highly motivated and informed group. The MDS chosen at random from the MDS mailing list. It is therefore conceivable that a proportion of the original study group also formed part of the second, longitudinal study. What is clear though, is that despite the fact that patients want information on ARMD and the fact that there are readily available sources (for example, free information booklets on ARMD from the Royal College of Ophthalmologists or Royal National Institute for the Blind), ophthalmic units throughout the United Kingdom are still failing routinely to provide such information to their patients.

L J Howe
Moorfields Eye Hospital, City Road, London EC1V 2PD, UK; lucy.robson@btopenworld.com

References

Standardised clinical photography in ophthalmic plastic surgery

We read with keen interest the path breaking article by Calista et al regarding the successful treatment of an eyelid squamous cell carcinoma with intrascleral cidofovir.2 The dramatic response of this highly malignant lesion to such a non-invasive form of therapy is remarkable and certainly worth further clinical evaluation. However, we would like to raise a few crucial issues pertaining to the documentation of this case.

The authors have presented an extreme close up of the affected eye which highlights the pretreatment appearance of the lesion quite adequately. However, the post-treatment photograph (Fig 2) is almost half the magnification of Figure 1. Therefore, although there is an indisputable reduction in the size of the tumour, the two clinical photographs are not strictly comparable since a decrease in magnification results in visual clues that lead to the lesion being perceived as smaller in size.

www.bjophthalmol.com
We attributed our results of lack of statistically significant pain relief with Entonox to less than 50 seconds’ administration of Entonox. Waud et al have shown that optimal administration of Entonox should cover 50 seconds, based on theoretical calculations for effective pain relief. Based on the above experience, we would like to know if the authors administered Entonox throughout the laser treatment and, if so, did it not interfere with the laser delivery since the inhalation process is likely to be associated with head movements? If the Entonox was given for a shorter duration, we need to know the duration of administration since that would be of practical benefit to the readers.

The authors have concluded that Entonox is useful in young patients, those undergoing re-treatments, and in patients who have previously not been able to tolerate the full treatment. We would like to know how the authors came to this conclusion, as there is no mention of the type of patients selected for their study.

S Sandramouli, M Kurli
Wolverhampton and Midland Counties Eye Infirmary, Compton Road, Wolverhampton WV3 9QH, UK
Correspondence to: Ms S Sandramouli; smouli@tinyonline.co.uk

References

Mechanism of ophthalmic artery occlusion following pars plana vitrectomy
Saito et al present a patient with Terson’s syndrome and dense vitreous haemorrhage who underwent pars plana vitrectomy and was noted postoperatively to have developed an ophthalmic artery occlusion. They propose that the ophthalmic artery was occluded by the spontaneous release of an embolus from an atheromatous plaque in the internal carotid artery. This seems unlikely in a 39 year old man without a previous history of symptomatic atherosclerotic disease. Although the authors identified plaques in the patient’s carotid artery by ultrasound, these can be seen in 11% of asymptomatic males under age 40 and may therefore be an incidental finding in this case.

An alternate explanation for the patient’s oculary findings is trauma from the retrobarbular injection. Intravascular injection into the ophthalmic artery has been reported as a complication of retrobarbular anaesthesia. It is possible that either an intravascular injection or simply needle tip trauma resulted in thrombus formation with obstruction of flow in the ophthalmic artery. It should also be noted that although acute ophthalmic artery occlusion is the presumed diagnosis, the same findings could result from simultaneous obstructions of the retinal and choroidal circulations, also causing macular oedema and hyalinization phenomena. On balance, it is highly unlikely that the succession of markings is responsible for the discrepancy between the positivity percentages of the two techniques. In addition, we chose to perform the two techniques simultaneously on paired corneas or on the halves of one cornea because we wanted to superimpose the two stains on the same cornea and thus obtain a double cell staining.

Dynamics of corneal endothelial cell death in organ culture
We read with interest the remarks of Crowston et al on our article.1 We showed that the TUNEL technique revealed a far higher percentage of endothelial cells (ECs) irreversibly engaged in a cell death process than that obtained by trypan blue staining. The two techniques were performed sequentially: after observation of typical blue staining, corneas were immediately fixed in formaldehyde for TUNEL. Crowston et al suggest that the trypan blue itself and/or the time spent outside the organ culture medium before fixing in formaldehyde may have caused an artefactual increase in the percentage of TUNEL positive ECs. Two arguments counter this remark.

(1) The trypan blue staining procedure is identical to that used, during endothelial examination(s) of grafts, in all European cornea banks that use organ culture during endothelial examination(s) of grafts. Neither the low concentration of trypan blue nor the short exposure time (about 1 minute) nor the short incubation in the presence of 0.9% NaCl has ever been incriminated in the over-mortality of ECs in routine practice.

Moreover, the innocuity of injections of trypan blue into the anterior chamber, a common feature during cataract surgery, has been well demonstrated.2

(2) The time spent outside the organ culture medium before fixing in formaldehyde, a period required for vital staining and microscopic examination of the endothelium, lasts only a few minutes. The cornea remains under the microscope for about 1 minute only, the time needed for image acquisition. Such rapidity is possible by using a prototype automatic analyser of the endothelium, which we developed and have recently published.3 This is very probably insufficient time for DNA fragmentation to occur at the level we observed. Moreover, the fixing of the endothelial layer in 10% formaldehyde is immediate, and prevents any continuation of fragmentation phenomena. On balance, it is highly unlikely that the succession of markings is responsible for the discrepancy between the positivity percentages of the two techniques.
The second remark by Crowston et al is particularly interesting. We too were surprised by the high percentage of TUNEL positive ECs (mean 12.7%, SD 16.4). This may imply that the cells with fragmented DNA. However, the DNA fragmentation may be at different stages, and the cells very likely spread according to a Gaussian distribution. Therefore the staining technique suggests.

G Thuret, C Chiquet, L Campos, P Gain
Cell Death and Neoplasia Laboratory EA 3063, University Hospital, St Etienne, France

References


NOTICES
Role of optometry in Vision 2000
The latest issue of Community Eye Health (No 45) discusses the mobilisation of optometry to deal with uncorrected refractive error, which is now a major cause of functional blindness.

For further information please contact: Journals of Community Eye Health, International Centre for Eye Health, Institute of Ophthalmology, 11–43 Bath Street, London EC1V 9EL, UK (tel: +44 (0)20 7608 6910; fax: +44 (0)20 7250 3207; email: eyeresource@ucl.ac.uk; web site: www.jceh.co.uk). Annual subscription (4 issues) UK£25/US$40. Free to workers in developing countries.

International Centre for Eye Health
The International Centre for Eye Health has published a new edition of the Standard List of Medicines, Equipment, Instruments and Optical Supplies (2001) for eye care services in developing countries. It is compiled by the Task Force of the International Agency for the Prevention of Blindness. Further details: Sue Stevens, International Centre for Eye Health, 11–43 Bath Street, London EC1V 9EL, UK (tel: +44 (0)20 7608 6910; email: eyeresource@ucl.ac.uk).

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 surgeons to India. Details can be found at the charity web site (www.secondsight.org.uk) or by contacting Dr Lucy Mathen (lucymathen@yahoo.com).

Specific Eye Condition(s) (SPECS)
Specific Eye Condition(s) (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 fifty different organisations related to eye disorders ranging from conditions that are relatively common to very rare syndromes. We also include groups who offer support of a more general nature to visually impaired and blind people. Support groups meet regularly in the Boardroom at Moorfields Eye Hospital to offer support to each other, share experiences and explore new ways of working together. The web site www.eyeconditions.org.uk acts as a portal giving direct access to support groups own sites. The SPECS web page 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)1803 524258; email: k@eyeconditions.org.uk; web site: www.eyeconditions.org.uk).

16th Annual Meeting of German Ophthalmic Surgeons
The 16th Annual Meeting of German Ophthalmic Surgeons will be held 8–11 May 2003 in Nürnberg, Germany. Messezentrum. Organised by the Professional Association of German Ophthalmologists Ophthalmic Surgery Group the conference will cover cataract surgery, refractive surgery, glaucoma surgery, vitreoretinal surgery, corneal surgery, eye surgery in developing countries, and orbita, lacrimal and lid surgery. Further details: MCN Medizinische Congress organisation Nürnberg AG, Zerzabelshofstr 29, 90478 Nürnberg, Germany (tel: +49 911 3931621; fax: +49 911 3931620; email: doc@mcnag.info; web site: www.doc-muenchen.de).

3rd British Oculoplastic Surgery Society Meeting
The 3rd British Oculoplastic Surgery Society Meeting will be held 18–19 May 2003 in Birmingham, UK. For further details please contact the Secretary of the British Oculoplastic Surgery Society Jane Oliffe (tel: +44 (0)121 424 5646; fax: +44 (0)121 424 4464; email: MartiDi@heartsol.wmids.nhs.uk; web site: www.bopss.org).

13th Meeting of the EASD Eye Complication Study Group
The 13th Meeting of the EASD Eye Complication Study Group will be held on the 23–25 May 2003, in Prague, Czech Republic. The scientific programme includes keynote lectures from Professor John H Fuller (UK) on The epidemiology of diabetic retinopathy; Dr P Martin van Hagen (The Netherlands) on Growth factors and diabetic retinopathy; Professor Terzie Pelikanova (Czech Republic) on Pathophysiology of diabetic microvascular complications; Dr Tomas Sosna (Czech Republic) on Risk and protective factors of diabetic retinopathy.

Three travel grants of €1000 each, sponsored by GlaxoSmithKline for young scientists (under 35 years at the time of the meeting). Applications should be made with the submission of abstracts. The deadline for abstracts is 14 February 2003.

For further details: Ortopedice Centro, s.r.o., Strekovske nabrezi 51, 400 03 Usti nad Labem, Czech Republic (tel: +420 47 521 6588; fax: +420 47 533 40 77; email: ortcentrum-ule@voln.cz; web site: www.ortopedice-centrum.cz).

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, Tuebingen, Germany (tel: +49 7071 293209; email: ingrid.kreissig@med.uni-tuebingen.de). Local organisation: Dr Arman Masheyekhi, Dr Siham Moradian, Dept of Ophthalmology, Labbanfinejad Medical Center, Pasdaran Ave, Boostan 9, Tehran, 16666, Iran (fax: +98 21 254 9039; email: labbafi@hotmail.com).
Trabeculectomy augmented with antimetabolites with a viscocanalostomy technique for the management of open angle glaucoma

I I K Ahmed and C Kranemann

Br J Ophthalmol 2003 87: 374-375
doi: 10.1136/bjo.87.3.374-a

Updated information and services can be found at:
http://bjo.bmj.com/content/87/3/374.2

These include:

References
This article cites 7 articles, 1 of which you can access for free at:
http://bjo.bmj.com/content/87/3/374.2#BIBL

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/