LETTERS TO THE EDITOR

Laceration of the eye with a fishing hook

EDITOR,—Perforation of the eye is a challenging emergency in ophthalmology and requires immediate treatment. Visual outcome after penetrating injuries with and without intraocular foreign bodies depends on the visual acuity after injury, age of patient, and the severity of the ocular trauma.1 We report a case of globe laceration following an accident with a fishing hook which was successfully treated without surgery.

CASE REPORT

A 12 year old boy presented with visual disturbance and a small lid wound on the left eye at our emergency department. He had been playing with a fishing rod while sitting on a tree, and was trying to hook fruit on the ground. The line recoiled swiftly and pierced the upper lid of the left eye. He jumped from the tree and the hook jerked itself out of the boy’s eye. A small wound of the left upper lid was found. The visual acuity was 20/20 in the right eye and 20/25 in the left eye. The anterior segment and the intraocular pressure were normal. The fundus of the right eye showed an endophthalmitis treated without surgery.

The ultrasound disclosed a partly detached vitreous with adherence at the site of penetration (Fig 1A). No foreign body was detected by the orbital computed tomograph scan. The patient was admitted to hospital for 8 days and treated with intravenous antibiotics during 1 week followed by an oral antibiotic in the second week. He also received cortisone systemically for 10 days. Three weeks later the visual acuity was 20/20. On funduscopy a sclerocchorioretinal scar was disclosed. The edges of the retinal tear were attached and vitreous haemorrhage was completely dissolved (Fig 2). After 1 year of follow up the situation remained unchanged.

COMMENT

Although penetrating injuries of the posterior segment often require surgical treatment (that is, pars plana vitrectomy), in this case antibiotic therapy was used in order to prevent an endophthalmitis1 in combination with orally administered cortisone to reduce the inflammatory reaction. Because of an excellent fundus view, postponing surgery seems to be more appropriate, since surgery implies additional risks (for example, cataract formation, retinal detachment, etc) for the eye.2 Significant predictors for a final visual acuity of 20/50 or better are a visual acuity of 20/800 or better and youth (< 18 years).3 In a mammalian study it was disclosed that simple penetration of the equator with vitreous loss does not lead to retinal detachment.4 An intact endophthalmitis is recommended for cases of thelaziasis, but in the absence of preoperative and postoperative findings of this case suggest that surgery is not the first treatment strategy for similar penetrations of the posterior segment.

RALF KROTT
K ULRICH BARTZ-SCHMIDT
Department of Vitreoretinal Surgery, University of Cologne, Germany

Correspondence to: Ralf Krott, MD, Department of Vitreoretinal Surgery, University of Cologne, Joseph-Stelzmann-Strasse 9, D-50924 Cologne, Germany.

Accepted for publication 11 June 1999


Intraocular infestation with the worm, Thelazia callipaeda

EDITOR,—Ocular infections with helminthic parasites are well described. The commonest organisms are flarial worms that reside in subcutaneous tissue, and are found as skin infestations or masses in the lids. Some are known to live freely in the conjunctival sac. Worms that are visible to the naked eye are often referred to as “eyeworms”, and are in the larval or adult stage of their life cycle. Thelazia callipaeda, or the oriental eye worm, is a spiruroid nematode which is the causative organism in thelaziasis, a well described condition affecting the external eye.1 It is primarily a parasite of the conjunctiva in dogs, and is also found in rabbits and humans.2 Its presence in the conjunctival sac causes lacrimation and irritation, and its frequent excursions across the cornea may cause marked discomfort and, eventually, corneal scarring. The worm also causes paralytic ectropion through its presence in the lower fornix. At least 40 cases of infection in humans have been described from China, Japan, India, Russia, Thailand, and Korea. All of these report extraocular infection only. We report the first case of Thelazia callipaeda to cause intraocular infection.

CASE REPORT

A 21 year old Chinese woman presented to the ophthalmology department at Shantou Central Hospital, Guangdong, China, complaining of decreased vision in her right eye for 1 month. She had no photopsia or field loss, and no pain, redness, or discharge. She had no past ocular or medical history, and was otherwise well.

On examination she had a visual acuity of 6/60 in the right eye, and 6/6 in the left eye. There was no external evidence of trauma; the lids were healthy, the conjunctiva white, the cornea clear, and the anterior chamber quiet. A mild vitreous haze obscured the foveal reflex, and clearly visible within the vitreous was a spiruroid nematode which is the causative organism in thelaziasis, a well described condition affecting the external eye.1 It is primarily a parasite of the conjunctiva in dogs, and is also found in rabbits and humans.2 Its presence in the conjunctival sac causes lacrimation and irritation, and its frequent excursions across the cornea may cause marked discomfort and, eventually, corneal scarring. The worm also causes paralytic ectropion through its presence in the lower fornix. At least 40 cases of infection in humans have been described from China, Japan, India, Russia, Thailand, and Korea. All of these report extraocular infection only. We report the first case of Thelazia callipaeda to cause intraocular infection.

One month later she underwent a three port pars plana vitrectomy, and the worm was coaxed into a flute needle and removed intact. The patient made an uncomplicated recovery from surgery. At 6 weeks postoperatively the eye was quiet and she had a visual acuity of 6/24. On detailed examination, the worm was identified as an adult female specimen of Thelazia callipaeda. Treatment with ivermectin is recommended for cases of thelaziasis, but in the absence of preoperative and postoperative
Thelazia callipaeda is a member of the phylum Nematoda, order Spiruroida, suborder Spirurata, superfamily Spiruroidea. Adult worms look like creamy white threads; males are 4.5–13 mm long and 0.25–0.75 mm in diameter; females are larger, ranging from 6.2 to 17 mm in length and 0.3 to 0.85 mm in diameter (Fig 1). It is known to infect the lacrimal sac, from where it passes into the conjunctival sac. It is probably deposited in the larval form by flies settling on the eyes and this accounts for extraocular infection. The adult worm in our patient’s eye was fully developed and healthy. It had caused little inflammatory response, and appeared to thrive in the conditions provided by the vitreous cavity, suggesting the possibility of immune privilege. We cannot explain how this worm entered the eye. We put forward the suggestion that humans may be the definitive host, with dogs and rabbits being the reservoir. For intraocular colonisation, the infective stage is probably the filiform larva, the portal of entry being the skin. An alternative mode of infection may be as the larva or embryonated egg ingested with raw drinking water.

COMMENT

Thelazia callipaeda (OriLuÇò, to suck) is a member of the phylum Nematoda, order Spirurida, suborder Spirurida, superfamily Spiruroidea. Adult worms look like creamy white threads; males are 4.5–13 mm long and 0.25–0.75 mm in diameter; females are larger, ranging from 6.2 to 17 mm in length and 0.3 to 0.85 mm in diameter (Fig 1). T. callipaeda is an unsegmented invertebrate with distinct oral and anal parts.1 The male is identifiable by its curved posterior (Fig 2A). In both the male and the female, the mouth is without lips (Fig 2B) and consists of two concentric rings of flattened papillae around a central opening. The gene responsible for autosomal dominant malattia leventinese has been mapped to the short arm of chromosome 2p16–21.1,4 We report the case of a woman who developed unusual complications associated with this disease during a 25 year follow up.

CASE REPORT

In 1973, ophthalmological examination led to a diagnosis of bilateral hereditary macular dystrophy (malattia leventinese) in a woman born in 1943. Her visual acuity was then 20/20 for both eyes without any correction (Fig 1A). In 1981, subfoveal neovascularisation led to an irreversible decrease in visual acuity in her right eye, down to 20/1000 (Fig 1B). In 1996, a dense retinal haemorrhage occurred. The left eye had a visual acuity of 20/30 and fundus examination revealed a macula identical to that of the right eye, without complication.

Macular dystrophy of malattia leventinese. A 25 year follow up

Editor,—Macular degeneration is a clinical term used to describe a variety of diseases characterised by progressive loss of central vision associated with abnormalities of Bruch’s membrane and the retinal epithelium. This dominantly inherited disorder, characterised by a radial pattern of innumerable small elongated basal laminar drusen, was initially reported in a family from the Leventine Valley (Switzerland).1,4 The gene responsible for autosomal dominant malattia leventinese has been mapped to the short arm of chromosome 2p16–21.1,4 We report the case of a woman who developed unusual complications associated with this disease during a 25 year follow up.

Figure 1  (A) Right eye. Fundus photograph in 1973 shows a radial pattern of innumerable small elongated basal laminar drusen. (B) Right eye. Fluorescein angiogram in 1981 shows submacular neovascularisation with fluorescein leakage.
CASE REPORT
A 75 year old white man noticed a sudden reduction in vision in his right eye while walking up a hill. He already had poor vision in his left eye from a CRVO 6 years earlier. He went immediately to eye casualty and was seen within 2 hours from the onset of symptoms. His only risk factor for vein occlusion was ocular hypertension treated with timoptol 0.25% twice daily to both eyes.

On examination, visual acuities were 6/36 right eye and counting fingers left eye, there was no relative afferent pupillary defect and intraocular pressures were 21 mm Hg in both eyes. Examination of the right fundus revealed scattered tiny blot haemorrhages and tortuous veins.

A fundus fluorescein angiogram showed pulsatile arterial filling with venous filling delayed until 34.6 seconds (Fig 1). A diagnosis of acute central retinal vein occlusion was made. Because of the previous left CRVO and the short history of symptoms in his right eye, the option of thrombolysis was carefully discussed with the patient, including the small risk of cerebral haemorrhage. Streptokinase, 1.5×10^6 units, was infused 7 hours after the onset of symptoms. Within 30 minutes, his visual acuity had improved to 6/9. The patient was empirically anticoagulated with heparin and warfarin, keeping the international normalised ratio between 2 and 3. Repeat fluorescein angiogram showed marked improvement in venous filling and loss of pulsatile arterial filling. In addition, several post thrombolysis haemorrhages were evident (Fig 2). The patient took warfarin for 9 months in total and now remains on aspirin alone. His vision in the right eye remains at 6/9.

COMMENT
Central retinal vein occlusion can profoundly affect vision and lead to neovascular complications. Current therapeutic options are limited mainly to the prevention or treatment of secondary complications.

Evidence for thrombus formation in CRVO has been reported by Green et al in a prospective histopathological study of patients with CRVO. They demonstrated recanalised thrombus in 89.7% of eyes and fresh thrombus formation in the remaining 10.3%.

Animal studies have shown encouraging responses to thrombolysis in experimental

Figure 2 (A) Right eye. Photograph in 1996. Advanced stage of the macular disease with irregular subretinal fibrous metaplasia, hyperplasia of the retinal pigment epithelium, and discrete radial basal lamellar drusen. Note also a wedge-shaped superotemporal area with intraretinal haemorrhages, hard exudates, and sheathed vessels. (B) Right eye. Fluorescein angiogram in 1996. Note the temporal retinal ischaemia with telangiectatic vessels, shunt vessels, and microaneurysms, in addition to the neovascularisation.

Figure 1 Fundus fluorescein angiogram of the right eye demonstrating early venous filling 34.6 seconds after injection.
Correspondence to: Dr J Olson.

CRVO. Fibrinolysis given within 2 days of experimental vein occlusion in rabbits was shown to result in resolution of retinal haemorrhages and return of normal retinal circulation within 48 hours. Similar animal studies using recombinant tissue plasminogen activator shortly after experimentally induced vein occlusion resulted in significant retinal vein patency in treated eyes. In one randomised controlled clinical trial, patients with CRVO who received streptokinase followed by full anticoagulation within 7 days of onset of visual symptoms, showed a statistically significant improvement in visual acuity. Late presentation was identified as a possible cause of limited improvement in some cases. Reports of vitreous haemorrhage occurring during treatment (3/20 cases) together with the reported incidence of cerebral haemorrhage with streptokinase (57/13607 cases) account for the absence of a defined role of this drug in the treatment of vein occlusions.

Selective cannulation of a branch retinal vein and infusion of tissue plasminogen activator in a patient with a non-acute CRVO in the second eye has been described. Several other treatment modalities had already been tried unsuccessfully. While avoiding systemic therapy, intravenous thrombolysis (tissue plasminogen activator) in the second eye has been described. Several experimental vein occlusions revealed generalised narrowing of the peripheral field and marked loss of central visual sensitivities. Bright flash electroretinograms revealed advanced stage of retinitis pigmentosa (Fig 1). There was no Mizuo’s phenomenon in the fundus. This patient reported that he had felt relatively better vision (“good day”) on every other day that alternated with worse vision (“bad day”).

Furthermore, he claimed that bad day was usually followed by a good day to return to the ordinary cycle. In our 10 years’ observation, the profile of day to day variation was reproducible. To quantitatively assess the characteristic visual symptoms, perimetric tests were performed in both the centre and periphery using an automated perimeter on eight different days in a period of 2 months, half on a good day and the other half on a bad day. ERG examinations were also performed. Figures 2 and 3 illustrate the results, demonstrating that the visual sensitivity in the peripheral field varied in a manner consistent with the patient’s reports, although not obvious in the central field. In contrast with perimetric results, ERG responses remained undetectable irrespective of visual fluctuations. His healthy parents were first cousins, and his elder brother had night blindness due to classic retinitis pigmentosa. Because of the mild mental retardation, the day to day visual fluctuations or other symptomatic variations could not be confirmed in his brother.

DNA was extracted from the peripheral blood after obtaining informed consent. Exon 11 of the arrestin gene was amplified using polymerase chain reaction. The amplified product was separated on polyacrylamide gel and revealed abnormally rapidly migrated signals suggesting a small deletion. Direct sequencing using an automated nucleotide sequencer (ALF EXPRESS, Pharmacia) disclosed a homozygous deletion of adenine at nucleotide 1147 (1147delA). This mutation

Retinitis pigmentosa with visual fluctuations and arrestin gene mutation

EDITOR,—We report a case of retinitis pigmentosa with day to day visual fluctuations and a mutation in the arrestin gene.

CASE REPORT

A 45 year old Japanese man first noticed night blindness at junior high school age, followed by a slowly progressive loss of visual acuities and fields. At presentation, the best visual acuity was 10/200 in each eye. Goldmann perimetrises revealed generalised narrowing of the peripheral field and marked loss of central visual sensitivities. Bright flash electroretinograms (ERG) in a fully dark adapted state was not recordable in either eye. Ophthalmoscopies revealed advanced stage of retinitis pigmentosa (Fig 1). There was no Mizuo’s phenomenon in the fundus. This patient reported that he had felt relatively better vision (“good day”) on every other day that alternated with worse vision (“bad day”).

Furthermore, he claimed that bad day was usually followed by a good day to return to the ordinary cycle. In our 10 years’ observation, the profile of day to day variation was reproducible. To quantitatively assess the characteristic visual symptoms, perimetric tests were performed in both the centre and periphery using an automated perimeter on eight different days in a period of 2 months, half on a good day and the other half on a bad day. ERG examinations were also performed. Figures 2 and 3 illustrate the results, demonstrating that the visual sensitivity in the peripheral field varied in a manner consistent with the patient’s reports, although not obvious in the central field. In contrast with perimetric results, ERG responses remained undetectable irrespective of visual fluctuations. His healthy parents were first cousins, and his elder brother had night blindness due to classic retinitis pigmentosa. Because of the mild mental retardation, the day to day visual fluctuations or other symptomatic variations could not be confirmed in his brother.

DNA was extracted from the peripheral blood after obtaining informed consent. Exon 11 of the arrestin gene was amplified using polymerase chain reaction. The amplified product was separated on polyacrylamide gel and revealed abnormally rapidly migrated signals suggesting a small deletion. Direct sequencing using an automated nucleotide sequencer (ALF EXPRESS, Pharmacia) disclosed a homozygous deletion of adenine at nucleotide 1147 (1147delA). This mutation

79
was also found in our two independent
patients with Oguchi's disease, but not in 25
unrelated cases of autosomal recessive retinitis
pigmentosa or 70 healthy individuals (Fig 4).

COMMENT
Some patients with advanced retinitis pigmentosa
report that their vision is "crystal clear" in
the morning but soon becomes fuzzy, and
some others announce on a particular visit
that their visual field testing either went well
or poorly depending on whether they are hav-
ing a good or bad day. The patient described
here had advanced retinitis pigmentosa and
reported that he had experienced over the
years alternating days of good and bad vision
and that the day to day visual fluctuations had
been modified by physical stress or alcohol
drinking. Perimetric evaluations of this case
demonstrated daily variability in visual sensi-
tivities which corresponded to the subjective
complaints. This form of visual fluctuation
appears unusual, and it is remarkable that this
patient had such a homozygous mutation in
the arrestin gene that gives rise to a premature
truncation of translation. The human arrestin,
also known as S-antigen, has an inhibitory role
in the activated phototransduction cascade. It
should be mentioned that the arrestin gene is
one of those expressed in the pineal gland that
is considered to play a major role in the circu-
dian rhythm. Thus, it is tempting to speculate
that the mutation in the arrestin gene could
have modified rhythmic activities to induce
daily alternating visual fluctuations in the
present retinitis pigmentosa patient. The full
coding sequences of the rhodopsin gene were
normal in the relevant patient (data not shown).
However, we could not deny the association of different polymorphisms in
gene products, or different environ-
mental influences on the daily alternating
visual fluctuations.

Recent molecular assessments revealed
families with diffuse retinitis pigmentosa with
or without features of Oguchi's disease
harbouring 1147 delA in the arrestin gene. The
patient described here provides addi-
tional evidence that the same arrestin
gene mutation is causally related not only to
Oguchi's disease but also to autosomal
recessive retinitis pigmentosa. It is emphasised
that our patient had classic features of
autosomal recessive retinitis pigmentosa with
poor visual prognosis and showed unusual
visual fluctuations. In view of a rare mutation
of arrestin gene, the relevant retinitis pigmen-
tosa might be extremely rare. In a large series
of white patients with aetiology of undefined
retinitis pigmentosa arrestin gene mutation
was not detected.

YASUSHI ISASHIKI
Center for Chronic Viral Diseases, Kagoshima
University Faculty of Medicine, Kagoshima-shi, Japan

NORIO OHBA
KATSUAKI KIMURA
SHIGZO SONODA
TOMOKO KAKIUCHI
Department of Ophthalmology, Kagoshima University
Faculty of Medicine, Kagoshima-shi, Japan

TETSUMA OZAWA
Yokohama Teishin Hospital, Yokohama, Japan

Orbital Kimura's disease in a white child

EDITOR,—Kimura's disease is an uncommon,
chronic inflammatory disorder of unknown
etiology which occurs predominantly in orien-
tals and presents with tumour-like swellings
mainly in the head and neck region. The condition primarily involves the
subcutaneous tissues, parotid glands, and/or
lymph nodes. Orbital cases are infrequent and
most reported cases are in adults, with only
one case in a child of Afro-Caribbean
descent. Our case report presents orbital
Kimura's disease in an 8 year old white child.

CASE REPORT
An 8 year old white girl presented to us with a
4 week history of a painless swelling of her
right upper lid. She initially had an upper
respiratory tract infection lasting a month
which was treated by her general practitioner
with Augmentin. She subsequently developed
what appeared to be a right sided pustis. Of
note, she had a strong history of allergic eye
disease with intermittent conjunctivitis, and
also suffers from asthma for which she takes
Pulmicort and Bricanyl inhaler regularly.
Examination revealed a right upper orbital,
mild right proptosis, and a palpable, painless
mass in the superior aspect of her right orbit.
There were no pupillary abnormalities,
her extraocular movements were full, and
documented ophthalmoscopic examination was unremarkable.
There was no associated regional lymphaden-
opathy and the rest of the ocular and general
physical examination showed no other abnor-
malities.

Investigations done included a full blood
count, which was within normal limits. WBC
8.57 × 10^9/L with a differential of neutrophils
62%, lymphocytes 26%, monocytes 6%,
eosinophils 5%, and basophils 5%. A mag-
netic resonance imaging (MRI) scan with

Br J Ophthalmol: first published as 10.1136/bjo.83.10.1194k on 1 October 1999. Downloaded from http://bjo.bmj.com/ on October 19, 2023 by guest. Protected by copyright.
COMMENT
Kimura’s disease (or angiolymphoid hyperplasia with eosinophilia) is a chronic inflammatory disorder of unknown aetiology which presents with tumour-like swellings mainly in the head and neck region. Most cases have been described in China and Japan, with relatively fewer cases reported in non-orientals. The disease typically affects males in the 20–40 year age group, and presents as single or multiple smooth swellings in the subcutaneous tissues, major salivary gland and/or lymph nodes in the head and neck area.

Histopathologically, the features described in previous cases corresponded with ours; there are eosinophilic infiltrates (mainly in a perivascular pattern), vascular proliferation, fibrosis, and formation of lymphoid follicles. It is still uncertain as to whether it represents a benign lymphoid neoplastic process, a variant of haemangiomata or an allergic reaction. There have been no reported cases of malignant change or fatalities. There is usually an insidious onset with a long benign course, but recurrences are common after surgical excision. Systemic associations include asthma and nephritic syndrome.

Regional lymphadenopathy ranges from 50–75% of cases and there is a high occurrence of peripheral blood eosinophilia.

Cases of Kimura’s disease have been reported in the orbits, although the cosmetic deformity can be quite a handicap. Periorbital cases have so far been limited to non-orientals.


Oral steroids (CLA). A diagnosis of Kimura’s disease (angiolymphoid hyperplasia with eosinophilia) was made.

At biopsy, the tumour was debulked and the patient was thereafter placed on a short 6 week course of oral steroids. The ptosis resolved and at 1 year follow up, there has been no clinical evidence of recurrence.

Figure 1 A magnetic resonance imaging (MRI) scan with contrast. There is an extensive superior orbital mass on the right side.

Figure 2 Section showing vascular proliferation with eosinophilic and lymphocytic perivascular inflammation and fibrosis. Haematoxylin and eosin stain. Original magnification ×200.
vitreal aminoglycosides we recommend the use of ceftazidime instead of amikacin or gentamicin.

TIMOTHY J JACKSON  
TOM H WILLIAMSON  
St Thomas’s Hospital, London

Correspondence to:  
Tim Jackson, Vitreoretinal Unit,  
Department of Ophthalmology, St Thomas’s Hospital,  
Lambeth Palace Road, London SE1 7EH

Accepted for publication 18 May 1999


Simultaneous administration of hepatitis B and polio vaccines associated with bilateral optic neuritis

BIOGENESIS—Immunisation against hepatitis B is recommended when there is an increased risk of contracting the virus because of lifestyle, occupation, or factors such as close contact with a case. Immunisation against poliomyelitis is routine, particularly in the UK with all children receiving the vaccine during childhood and then again in the teenage years. For those individuals at continued risk of infection, further reinforcing doses are given every 10 years.

Both are commonly used vaccines and serious adverse reactions are extremely rare. We describe a case of severe bilateral, progressive optic neuritis occurring 1 week after vaccination against hepatitis B and polioimmunisation.

CASE REPORT

A 44 year old female health worker presented with gradual reduction of vision in both eyes associated with retrobulbar discomfort exacerbated by ocular movement, 7 days after vaccination against hepatitis B and polioimmunisation. Ophthalmological findings revealed visual acuities of 6/18 right eye, 6/12 left eye associated with bilateral optic nerve swelling. Within the next 48 hours the visual acuities dropped to perception of light in both eyes with absent direct and indirect pupil light responses. This was despite commencement of therapy with intravenous methylprednisolone. Systemic examination revealed no other abnormalities. All haematological and biochemical investigations were normal and no infective cause was isolated. Computed tomograph imaging was normal and there was no evidence of demyelination on magnetic resonance imaging. Cerebrospinal fluid (CSF) examination revealed no abnormality either biochemically, after culture, or on electrophoresis. In addition, CSF pressure was within normal limits. Visually evoked potentials revealed absent responses. Despite 5 days of intravenous methylprednisolone (1 g per day) followed by a slow tapering of oral prednisolone (1 mg/kg/day) her vision remained poor (counting fingers at 1 metre in both eyes) after 3 months.

COMMENT

The recombinant hepatitis B vaccine has been associated with a diverse range of isolated adverse reactions but ocular complications are exceedingly rare. Granell et al attributed four cases of central retinal vein occlusion in patients under 50 years of age to the vaccine, 1 and associations with multiple evanescent white dot syndrome (MEWDS) 2 and acute posterior multifocal placoid pigment epitheliopathy (APMPPE) 3 have been described. Vaccinations derived from whole cell vaccine are associated with a diverse range of isolated adverse reactions although the risk remains exceedingly rare. Granel et al have also attributed four cases of bilateral optic neuritis occurring 1 week after vaccination which has been described. 4 The incidence of vaccine derived paralytic poliomyelitis is reported as being one in three million in recipients of the vaccine or their close contacts. 5 The vaccine has also been linked to some cases of Guillain-Barré syndrome 6 but ocular complications have not been reported.

Others such as the trivalent measles, mumps, and rubella (MMR) vaccine 7 and the monovalent rubella vaccine, 8 have also been associated with bilateral optic neuritis.

The exact mechanism by which neurological complications following vaccination are unknown but various hypotheses exist including immune complex mediated demyelination or neurotoxicity, antigenic mimicry between the vaccine and host tissue proteins, immediate hypersensitivity reactions, and stimulation of a pathogenic lymphocyte response.

A severe neurological presentation generally occurs 1–3 weeks following vaccination which supports the claim that vaccination was the aetiological factor in this case. To the best of our knowledge, this is the first report of this complication with either of these vaccines. The fact that there are many case reports describing a diverse variety of systemic reactions of an autoimmune nature associated with both vaccines also adds to the claim. Those cases of optic neuritis attributed to other vaccines and to post infectious optic neuritis generally did better with corticosteroid therapy than in our case but high dose corticosteroids are generally considered to be the treatment of choice in these rare but potentially devastating complications.

OWEN STEWART  
BERNARD CHANG  
JOHN BRADBURY  
Department of Ophthalmology, Bradford Royal Infirmary, Bradford, West Yorkshire

Correspondence to: Mr Owen Stewart, Department of Ophthalmology, St James’s University Hospital, Leeds, West Yorkshire, LS9 7TF

Accepted for publication 18 May 1999

Retinopathy after long term, standard doses of hydroxychloroquine

EDITOR,—While the antimalarial drug chloroquine has frequently been reported to cause retinopathy, there have been very few documented cases occurring with hydroxychloroquine (Plaquenil, Winthrop Pharmaceuticals, New York, USA).1–5 Patients may tolerate large cumulative doses (up to 3923 g) of hydroxychloroquine without developing retinopathy.1 Doses of <400 mg/day and ≤6.5 mg/kg of body weight/day of hydroxychloroquine have been used safely and some authors have suggested that ophthalmic screening is not necessary for patients on these doses.2–5 We present a case of hydroxychloroquine toxicity that developed in a patient after long term use of 400 mg (6.3 mg/kg) of hydroxychloroquine daily.

CASE REPORT

A 61 year old white woman presented with a 1 year history of increased glare in both eyes without change in visual acuity. She had a history of rheumatoid arthritis for which she took chloroquine and had no history of renal function was normal, thereby making chloroquine dose was 1460 g. The patient had never taken chloroquine and had no history of macular disease. Her weight had been stable over the 10 year period. Family history was negative for macular dystrophy or retinal degeneration. Visual acuity at presentation was 20/20 in both eyes. Colour vision testing with pseudoisochromatic plates was normal in both eyes. Fundus examination showed subtle retinal pigment epithelium (RPE) pigmentation changes in a crescent pattern around the inferi or fovea of both eyes (Fig 1A). Fluorescein angiogram confirmed the fundus findings (Fig 1B) which were felt to be early bull’s eye maculopathy. No drusen or signs of macular degeneration were appreciated in either eye. A central visual field performed with Humphrey automated static threshold perimeter using a white test object revealed bilateral para central scotoma corresponding to the macular pigmentary changes (Fig 2, upper). A diagnosis of hydroxychloroquine retinopathy was established and the drug was discontinued.

Ten months later the patient’s vision remained 20/20 with normal colour vision in both eyes. Her symptom of glare in both eyes had resolved. The RPE changes in the retina were unchanged and visual field testing showed some improvement of the paracentral scotoma (Fig 2, lower).

COMMENT

Hydroxychloroquine retinopathy is a rare condition characterised by bull’s eye maculopathy or pigmentary changes in the macula, corresponding scotomas on visual field testing, and irreversible signs and symptoms once hydroxychloroquine is stopped.2–4 Cases of preretinopathy have been described in which visual field defects were elicited using a red test object but not a white test object on Humphrey perimeter.2–4 All cases of preretinopathy completely resolved after the discontinuation of hydroxychloroquine.2 Five cases of true hydroxychloroquine retinopathy reported in the literature demonstrated that discontinuation of hydroxychloroquine resulted in stabilisation but not resolution of the retinopathy.2–4 Unlike the other reported cases of true hydroxychloroquine retinopathy, our patient had some resolution of visual field loss. Much controversy exists as to whether the daily or cumulative dose of hydroxychloroquine contributes the greater risk for retinopathy. While there have been reported cases of hydroxychloroquine toxicity at cumulative doses similar to our patient’s (1460 g over a 10 year period), these patients had (1) received chloroquine therapy before hydroxychloroquine therapy, (2) were treated with daily doses ≥400 mg/day, or (3) exceeded a daily dosage of 6.5 mg/kg of body weight/day.5 Our patient’s daily dose never exceeded 400 mg/day or 6.3 mg/kg of body weight/day. Her renal function was normal, thereby making the possibility of inadequate clearance of hydroxychloroquine unlikely.

Hydroxychloroquine may cause retinopathy when used in recommended doses over a long period of time. Since a threshold dose for retinal toxicity has not been established, careful screening examinations should be performed especially as the cumulative dose increases. Prompt cessation of hydroxychloroquine may result in stabilisation of maculopathy at a clinically benign stage.

JENNIFER E THORNE
ALBERT M MAGUIRE
Department of Ophthalmology, Scheie Eye Institute, The Hospital of the University of Pennsylvania, University of Pennsylvania School of Medicine, Philadelphia, USA
Visual loss after primary trabeculectomy with mitomycin C in Ehlers-Danlos syndrome

EDITOR—Antiproliferatives such as mitomycin C are commonly used in glaucoma filtration surgery in patients at high risk of scarring postoperatively. Although ocular hypotony and maculopathy are known complications of such surgery, reversible and profound vision loss in association with hypotony induced optic disc swelling is rare. It has previously been suggested that hypotony related complications may be more common in myopes as they have “large eyes” as a young child, as shown in this photograph taken at age 2 years (top left). Reversal of hypotony as evidenced by bilateral IOPs of 0 mm Hg, superficial corneal epithelial staining, and macular and choroidal folds. Both optic discs were swollen although no haemorrhages or cotton wool spots were observed. The patient was sensitive to light and good quality photographs could not be obtained. An ultrasound showed bilateral anterotemporal choroidal detachments involving the ciliary body (right larger than left) and axial lengths recorded as 23.0 mm in both eyes.

She underwent several surgical procedures. The day after she first presented, she underwent a right subconjunctival autologous blood injection to the right bleb under general anaesthesia. The following day, however, her vision was worse with visual acuities being recorded as patchy areas of perception of light on the right and hand movements temporally on the left. Her IOPs were 4 and 0 mm Hg in the right and left respectively and the degree of disc swelling (as judged by further elevation of the disc) was noted bilaterally. It was considered by a neurologist (GTP) that the disc swelling may itself be contributing to the visual loss, particularly in view of transient visual obscurations which suggested critically impaired perfusion of the disc. To prevent even further vision loss, a lumbar puncture to reduce the CSF pressure was suggested, to provide short term improvement in disc perfusion, which it was hoped in the longer term would be helped by raising her intraocular pressure. She underwent further surgery to both her eyes for hypotony, later that evening, which comprised revision of both blebs with scleral patch grafts. This was preceded by a lumbar puncture under general anaesthesia at which there was an opening pressure of 22.5 cm H2O. A volume of 30 ml of CSF was removed and the new opening pressure was recorded as 5.5 cm H2O with microbiological and biochemical analysis of CSF revealing no abnormality.

The day after surgery, the fourth day after initial presentation, examination revealed improved visual acuities of HM in both eyes with IOPs of 19 and 23 mm Hg in the right and left eye respectively. The disc swelling was felt to be reduced, and over the next few days improved gradually. Seven days after presentation, her IOPs had fallen to 0 and 8 mm Hg, right and left, respectively, and she was taken back to theatre for anterior chamber refilling with Healon-GV. Her IOPs responded very quickly to this final procedure and she remains on no antiglaucoma medication with normal intraocular pressures (less than 20 mm Hg) now 7 months after presentation. Both drainage blebs are Seidel negative with IOPs of 19 and 23 mm Hg in the right and left respectively, and she was taken back to theatre for anterior chamber refilling with Healon-GV. Her IOPs responded very quickly to this final procedure and she remains on no antiglaucoma medication with normal intraocular pressures (less than 20 mm Hg) now 7 months after presentation. Both drainage blebs are Seidel negative with IOPs of 19 and 23 mm Hg in the right and left respectively.

She underwent one other further surgical procedure, 7 weeks after presentation, when her IOPs became elevated again at 35 and 28 mm Hg right and left respectively, to a degree where it was felt her optic discs would be compromised. Treatment consisted of needling procedures to both blebs with subconjunctival injections of 5-fluorouracil to reduce scar formation. Her IOPs responded very quickly to this final procedure and she remains on no antiglaucoma medication with normal intraocular pressures (less than 20 mm Hg) now 7 months after presentation. Both drainage blebs are Seidel negative with good evidence of aqueous drainage into the filtration blebs (Fig 1, top right). Her visual acuities and visual function have now recovered quite substantially. However she does have a relative afferent pupillary defect in the left eye, and her current refraction and visual acuities are right eye −1.0 to −4.0 × 05° (RVA 20/30) and left eye −1.75 to −6.5 × 08° (LVA 20/120). Her optic discs show no evidence of swelling, and she has neither choroidal detachments nor macular folds (Fig 1, bottom left and right) as confirmed on ultrasound.

COMMENT

This young girl presented to us with severe ocular hypotony following bilateral primary glaucoma filtration surgery with mitomycin C. She developed vision loss, with episodes of transient obscurations attributable to hypotony and disc swelling. Her response to the initial surgery and subsequently to the corrective
The development of severe vision loss in our patient was associated with the occurrence of transient obstructions and hypotonous disc swelling. Resolution of the disc swelling was 4–6 weeks after correction of the hypotony, and improvement in visual acuity was noted thereafter. Its natural history—that is, the pattern of resolution and visual recovery, is compatible with disc swelling. Visual loss associated with hypotonous maculopathy, however, may never recover despite reversal of hypotony. Prolonged disc swelling in ocular hypotony is a recognised complication that is fortunately very rare. Experimental models have suggested that axoplasmic transport is delayed in cases of hypotony and induced optic disc swelling giving rise to the same features histologically as seen with raised intracranial pressure papilloedema—for example, axonal swelling, accumulation of mitochondria, and cytoplasmic bodies (cotton wool spots) formation. The pathogenesis of disc swelling in ocular hypotony may be related to that occurring in raised intracranial pressure if it is postulated that in both situations the CSF pressure in the subarachnoid space around the optic nerve exceeds the perfusion pressure of the optic disc. Therefore in our patient, it was considered that lowering the CSF pressure to well below normal levels (<20 mm Hg) might provide temporary improvement in ocular disc perfusion—hence our target for a very low closing pressure of 5.5 mm Hg in the lumbar puncture. Two previous reports of unilateral disc swelling following trabeculectomy also suggest that optic disc oedema could result from a disturbed equilibrium between ICP and IOP—though none of the patients described in these papers had hypotony or profound vision loss. The development of profound vision loss in association with hypotony induced optic disc swelling in our patient, was as a complication of mitomycin C assisted glaucoma filtration surgery. However, the degree of hypotony was most probably related to reduced scleral rigidity. We believe that her abnormal wound healing response and defective connective tissue contributed to the severity of the hypotony that followed initial surgery with mitomycin C. We suggest that antiproliferatives be used with extreme caution in patients who you suspect may have a connective tissue disorder. A quick screening procedure might include a joint hypermobility score as shown in Table 1.

Patients with Ehlers-Danlos syndrome, such as our patient, may be at high risk of post filtration hypotony and developing “soft eyes” with sight threatening sequelae, as our case suggested that not only might they have elastic skin but also “elastic globes”.

Table 1 Screen for joint hypermobility

<table>
<thead>
<tr>
<th>Action</th>
<th>Score (maximum = 9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive hyperflexion of 5th metacarpal phalangeal joint beyond 90°</td>
<td>1 point each hand (max = 2)</td>
</tr>
<tr>
<td>Passive hyperextension of thumb to flexor aspect of wrist</td>
<td>1 point each hand (max = 2)</td>
</tr>
<tr>
<td>Hyperextension of elbow beyond 10°</td>
<td>1 point each arm (max = 2)</td>
</tr>
<tr>
<td>Hyperextension of knee beyond 10°</td>
<td>1 point each leg (max = 2)</td>
</tr>
<tr>
<td>Forward flexion of trunk, palms flat on floor in front, knees in extension</td>
<td>1 point</td>
</tr>
</tbody>
</table>

Support in part by the Wellcome Trust (grant no 048474) (to MFC), Guide Dogs for the Blind (MFC), and the Medical Research Council (to PTK).

M FRANCESCA CORDEIRO
Wound Healing Research and Glaucoma Units,
Institute of Ophthalmology and Moorfields Eye Hospital, London

GORDON T PLANT
Moorfields Eye Hospital and National Hospital for Neurology and Neurosurgery, London

ANNIE CHILD
St George’s Hospital Medical School, London

BARRY JONES
Moorfields Eye Hospital, London

PENG T KHAW
Wound Healing Research and Glaucoma Units,
Institute of Ophthalmology and Moorfields Eye Hospital, London
Correspondence to: Peng T Khaw, Wound Healing Group and Glaucoma Unit, Pathology Department, Institute of Ophthalmology, Bath Street, London EC1V 9EL.

Accepted for publication 18 May 1999


Fluctuating oculomotor hyperfunction and hypofunction caused by aneurysmal compression of the third cranial nerve

Editor,—Aneurysms of the posterior communicating artery classically present with a syndrome of oculomotor nerve paresis secondary to unruptured intracranial aneurysm. Aneurysms are found in the majority of cases, with the occurrence of bilateral ocular movement disturbance being uncommon. Aneurysms are usually symptomatic, although occasionally, a large proportion of asymptomatic patients may be identified. The occurrence of spontaneous resolution of oculomotor nerve palsies is described in the literature. Although there is some controversy as to whether the irritation of the facial or secondary hyperexcitability of the facial nerve nucleus that is responsible for hemifacial spasm, 1 it is now accepted by most authors that compression of the facial nerve is the causative factor. 2 A precise intraoperative correlation between decompression of the facial nerve and electromyographic disappearance of abnormal facial muscle activity has been demonstrated 3 although the facial weakness has been reported to take longer to resolve. 4 An analogous situation of aneurysmal compression causing alternating oculomotor hypo- and hyperfunction as a result of a compressive lesion. Secondly, it may occur as a complication of the oculomotor nerve compression causing alternating oculomotor hypo- and hyperfunction as a result of a compressive lesion. Furthermore, in the case reported here is suggested by the similar course of resolution to that seen following decompression of the facial nerve for hemifacial spasm—the third nerve hyperactivity resolved immediately following clipping of the aneurysm while the oculomotor paresis improved rapidly but took several weeks to resolve fully. The degree of third nerve hyperactivity is, however, much greater than the mild facial weakness seen in hemifacial spasm and may have been due to the greater degree of compression of the third nerve in this case.

This case is important for two reasons. Firstly, this is the first report of compression of the third cranial nerve producing alternating oculomotor hypo- and hyperfunction as a result of a compressive lesion. Secondly, it emphasizes the importance of excluding compression by intracranial aneurysm in a patient with variable signs which could be explained by a partial third nerve palsy.

MARGARET R DAYAN
WALTER ELYSTON
Oxford Eye Hospital, Radcliffe Infirmary, Woodstock Road, Oxford OX2 6HE

 Correspondence to: Miss Dayan
Accepted for publication 31 May 1999


Late onset of Leber's hereditary optic neuropathy in HIV infection

Editor,—We report a case of late onset of Leber's hereditary optic neuropathy (LHON) in a 59 year old patient with HIV infection being treated long term since 1991 with zidovudine. The onset and course of the patient's eye disease as well as the diagnostic process were analysed. Molecular genetic testing revealed the mitochondrial DNA (mtDNA) mutation in nucleotide position 11778 confirming the diagnosis of LHON. In our patient late disease expression may be interpreted as a result of the rare combination of the 11778 mutation with HIV infection and long term zidovudine treatment. This is the first report on a patient with LHON suffering from additional HIV infection.

Figure 1 (Top) Right ptosis with frontalis overaction and right hypertropia. (Middle) Right ptosis has resolved. (Bottom) A few minutes later there is right upper lid retraction and right hypertropia indicating right third nerve hyperfunction.

1204
Letters
Br J Ophthalmol: first published as 10.1136/bjo.83.10.1194k on 1 October 1999. Downloaded from http://bjo.bmj.com/ on October 1999. Protected by copyright.
A 59 year old white man was admitted to our outpatient department in July 1997 with acute onset of vision loss in his left eye within the previous 2 weeks. The patient had been diagnosed with HIV infection in 1991. No opportunistic infections defining AIDS had been present so far. Antiretroviral therapy consisted of zidovudine since June 1991 as well as additional indinavir and nevirapine since January 1997. Best corrected visual acuity was right eye 20/20 and left eye 6/20. Further ophthalmic examination revealed a left afferent pupillary defect and an absolute central scotoma in the left eye. Indocyanine green angiography and fluorescein angiography disclosed a slight oedema of the optic disc without leakage. Visual evoked potentials (VEP) of the left eye showed reduced central amplitudes and prolonged latencies. Ophthalmic examination of the right eye at the time of presentation was normal.

Primary mitochondrial mutations, nutritional deficiencies defining AIDS had been present so far. Antiretroviral therapy consisted of zidovudine since June 1991 as well as additional indinavir and nevirapine since January 1997. Best corrected visual acuity was right eye 20/20 and left eye 6/20. Further ophthalmic examination revealed a left afferent pupillary defect and an absolute central scotoma in the left eye. Indocyanine green angiography and fluorescein angiography disclosed a slight oedema of the optic disc without leakage. Visual evoked potentials (VEP) of the left eye showed reduced central amplitudes and prolonged latencies. Ophthalmic examination of the right eye at the time of presentation was normal.

LHON is a bilateral acute or subacute optic neuropathy (LHON). The disease penetrance includes heteroplasmy, secondary mitochondrial mutations, nutritional deficiencies, metabolic disease, and toxic exposure. Apart from the primary mutation our patient had no history of concomitant exposure to chemicals, toxins, or dangerous factory processes was not reported. Significantly larger amounts of foods with high cyanide content were not described. Additional metabolic or neurological diseases were not present.

COMMENT

LHON is a bilateral acute or subacute optic neuropathy defined by the presence of mitochondrial DNA (mtDNA) mutations yielding a mutational position 11778, 3460, and 14484, involving NADH dehydrogenase (ND) subunits 1, 4, and 6, respectively, of respiratory chain complex I, are responsible for the onset of visual loss in LHON typically occurs between the ages of 15 and 35 years in most pedigrees. We hypothesise that the exception- ally long period of zidovudine treatment since diagnosis of HIV infection in 1991 and/or the diagnosis itself may account for the unusual late expression of LHON in our patient. This is the first report on a patient with LHON suffering from additional HIV infection.

Christoph Lüke
Klinik und Poliklinik für Augenheilkunde
Oliver A Cornely
Klinik und Poliklinik für Augenheilkunde
Julia Frick
Erl Fehr
Karl Ulrich Bartz-Schmidt
Klinik und Poliklinik für Augenheilkunde, Universität Köln, Germany
Jura Stollmann
Universität Köln, Germany
бернд Wissinger
Molekulargenetisches Labor, Universitätsgesüchlinke, Tübingen, Germany
Richard Brunner
Klinik und Poliklinik für Augenheilkunde, Universität Köln, Germany
Correspondence to: Christoph Lüke, Klinik und Poliklinik für Augenheilkunde, Universität Köln, Joseph-Stelzmann Strasse 9, D-50924 Köln, Germany
Accepted for publication 17 June 1999


Acute onset comitant esotropia as presenting sign of demyelinating disease

Editor,—Comitant esotropia is most commonly benign when occurring in infancy or early childhood. Examination to rule out a parietic deviation is essential. However, acute onset of comitant esotropia has also been reported in association with serious neurological disease. It has been reported in association with hydrocephalus.1 These patients generally have obvious neurological problems associated with hydrocephalus, and are not a diagnostic dilemma. They may have a meningoencephalo- or encephalocele, and an A-pattern esotropia.1 On examination, visual acuity without correction was 20/20 bilaterally. Pupils were equally reactive without an afferent pupillary defect. Extraocular motility was full, and saccades were grossly normal and symmetric. Alternate cover testing revealed a comit- ant 15 prism dioptre esotropia for both near and distance fixation. He was able to fuse with the appropriate prism in place. Slit lamp examination was unremarkable. Dilated reti- nal examination revealed pink and sharp optic nerves with no papill oedema. Macula, vessels, and retinal periphery were all within normal limits.

The patient underwent magnetic resonance imaging (MRI) the next day (Fig 1). The study revealed a hyperintense signal on T1 weighted imaging in the area of the periaque- ductal grey matter in the midbrain. The lesion was consistent with a demyelinating disease including acute disseminating encephalomyelitis or multiple sclerosis. The patient was referred for neurological evaluation and lumbar puncture the next day. However, on presenta- tion to the paediatric neurologist, the patient noted that his diplopia had gradually resolved. Lumbar puncture was not performed because neurological examination was entirely unremarkable. Follow up ocular examination revealed normal ocular align- ment and motility.

COMMENT

Acute onset comitant esotropia is most commonly benign when occurring in infancy or early childhood. Examination to rule out a parietic deviation is essential. However, acute onset of comitant esotropia has also been reported in association with serious neurological disease. It has been reported in association with hydrocephalus. These patients generally have obvious neurological problems associated with hydrocephalus, and are not a diagnostic dilemma. They may have a meningoencephalo- or encephalocele, and an A-pattern esotropia.1 In cases of comitant esotropia associated with shunt failure, all the esotropias resolve when the shunts are revised. These patients do not have A-pattern

esotropias. Patients may not necessarily present with papilloedema even when hydrocephalus is present. In the present case, no hydrocephalus was noted on neuroradiographic study.

Arnold-Chiari malformation has also been reported in association with acute comitant esotropia. These cases may present with an A-pattern, co-existing nystagmus and hydrocephalus. Arnold-Chiari malformations sometimes do not manifest until late childhood or adulthood, and can be mild. Neuroradiographic study did not reveal Arnold-Chiari malformation in this patient.

Central nervous system tumours have also been reported in association with acute onset comitant esotropias. Tumours in this group include cerebellar astrocytomas, and medulloblastomas, as well as pontine gliomas. An A-pattern esotropia is unusual in these patients. In a report by Williams and Hoyt, three of their six patients had some form of nystagmus associated with the comitant esotropia. They suggested neurological evaluation in any patient with both nystagmus and acute comitant esotropia. Acute disseminated encephalomyelitis is generally post viral and is characterised by abrupt headache, fever, drowsiness, and focal neurological dysfunction. Cerebrospinal fluid analysis may exhibit pleocytosis. It may resolve completely or may result in permanent impairment and seizures. Whether this lesion represents a localised variant of acute disseminated encephalomyelitis or multiple sclerosis is not clear. However, cases of acute onset comitant esotropia with suspicious presentations warrant neuroimaging to rule out intracranial pathology including central nervous system demyelinating lesions.