LETTERS TO THE EDITOR

Central serous papillopathy

Editor,—Central serous retinopathy is a serous macular detachment that produces central visual loss in one eye. It may occur idio-
pathically or in conjunction with a pit or colo-
boma of the optic disc. In idiopathic cases,
fluorescein angiography characteristically shows one or more leakage points through
which choroidal fluid transgresses the retinal
pigment epithelium to enter the subretinal
space.1 This report describes a patient who
developed a serous retinal detachment ex-
tending from the optic disc to the macula
which was associated with a discrete angio-
graphic area of capillary leakage within a non-
excavated optic disc.

CASE REPORT
A 32 year old man awoke with blurred vision
in his left eye that had persisted over a 4 day
period. He denied pain with eye movement or
associated headache. He had a history of poor
vision in the right eye since early childhood
which had not improved with occlusion
therapy. Except for a recent upper respiratory
infection, he was otherwise healthy.

Visual acuity was hand movements in the
right eye and 20/200 in the left eye. Papillary
examination showed a 1+ afferent pupillary
defect on the right. Dilated slit lamp
examination showed no vitreous cells or other
evidence of intraocular inflammation. There
was no significant refractive error in either
eye. Retinal examination showed a heavily
pigmented scar in the macula of the right eye.
The retina appeared normal in the left eye.
The optic disc in the left eye was normal in
size but had a tilted configuration and a
prominent temporal crescent (Fig 1).

Systemic evaluation included magnetic
resonance imaging of the head, chest
size but had a tilted configuration and a
prominent temporal crescent (Fig 1). Sonographic examination of the optic disc dis-

Figure 1 A shallow macular detachment
extends from the optic disc to the macula. The
disc is tilted and has a prominent temporal
crescent.

Fluorescein angiography disclosed no residual abnormality (Fig 2D).

The differential diagnosis of this patient’s
disorder included occult optic pit, optic disc
haemangiomata, and a focal capillary leakage
deep within the optic disc, with egression of
fluid into the subretinal space. Occult optic
pit and optic disc haemangiomata were ruled
out by clinical examination and by the
complete resolution of the abnormal hyper-
fluorescence on fluorescein angiography, sug-
gesting the presence of a focal capillary leak-
age within the optic disc which may have been
inflammatory in origin. Abnormal capillary
leakage deep within the optic disc may cause
intraretinal fluid accumulation with forma-
tion of a macular star in the setting of
neuroretinitis;2 however, transgression of fluid
into the subretinal space is generally
prohibited by the intermediary tissue of
Kuhnt, providing a non-physiological
conduct between the optic disc and the
subretinal space.

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Immunohistochemical findings in a patient
with unusual late onset manifestation of
ligneous conjunctivitis

Editor,—Ligneous conjunctivitis is a rare
chronic membranous conjunctivitis with typi-
cal woody induration of the conjunctival
tissue.1 2 It occurs most often bilaterally in
female children and is of unknown aetiology.1 3
The disease process may involve other mu-
cous membranes, such as the cervix and the
trachea, occasionally leading to death by
tracheal obstruction.4 Few patients with adult
onset ligneous conjunctivitis have been seen.1 4
They generally experience a milder course
and systemic involvement is less common.
Autoimmune dysfunction, infection with an
unidentified virus, and an inherited predispo-
sition possibly combined with trauma have all
been proposed as possible causes for the
disease.1 4 Recent studies have found an
inherited defect in the plasminogen system of
affected children.1 Treatment of the condi-
tion is problematic and often unsuccessful.1 4

CASE REPORT
A 69 year old woman presented with recurrent
unilateral conjunctivitis. She had dry eyes and
foreign body sensation, but no visual impair-
ment. Conjunctival injection with dense mem-
branes and fibrosis of the lids was present (Fig 1).
Peripheral corneal vascularisation was
Figure 1 At the initial presentation of the patient a conjunctival infection and dense, membranous fibrosis of the upper lid were seen.

identified. Conventional histology confirmed the clinical diagnosis of ligneous conjunctivitis. Immunohistology for CD3, CD4, CD6, CD15, CD20, CD68, CD79a, vimentin, collagen type IV, and cytokeratin according to standard procedures was performed to characterise the inflammatory tissue (Table 1).

Before repeated surgical excision, conservative topical therapy with corticosteroids alone (0.1% dexamethasone five times daily) was unsuccessful. Subsequent topical treatment with the following: disodium cromoglycate 4% combined with 5000 IU/ml heparin eye drops (three times daily each), corticosteroids (0.1% dexamethasone five times daily), 2% cyclosporine A (three times daily), and antibiotics and artificial tears was to no avail. The membranes were excised three times within 8 months, followed by topical corticosteroids (0.1% dexamethasone or prednisolone, 0.5%), and heparin eye drops (5000 IU/ml) that were both slowly tapered from five times daily over 4 weeks.

The membranes recurred within a few weeks of each excision. Immunohistology showed a chronic inflammatory process characterised by plasma cells and lymphocytes. There was a relative shift towards CD8+ cells in the CD4/8 ratio. Surprisingly, pancytokeratin, a marker for tissue of epithelial origin, was detected in the endothelium of the blood vessels invading the granulomatous tissue (Fig 2).

Serologically, a severe type 1 plasminogen deficiency was detected. Analysis of the plasminogen gene revealed two single base mutations, Lys 19 Glu and Arg 216. Expression of pancytokeratin is positive in vascular endothelial cells and surrounding muscular cells.

COMMENT
This case represents primary onset of ligneous conjunctivitis in adulthood with the typical histology combined with serological findings that have previously only been seen in paediatric patients. Immunohistochemical investigations confirmed a chronic inflammatory process, consistent with a possible autoimmune origin, but could not determine the cause of this condition. Surprisingly, the antigen pattern of vascular endothelium in the granulation tissue involved pancytokeratin and was similar to that found in epidermoid angiosarcoma. This result needs further evaluation. Systemic plasminogen deficiency was found for the first time in an adult patient with ligneous conjunctivitis. The incidence of this gene defect in adult patients may be determined investigating more patients. This finding might become important for future treatment developments. Currently, the treatment of ligneous conjunctivitis in these patients remains ineffective.

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Multifocal electroretinography in patients with occult macular dystrophy

Editor,—Occult macular dystrophy (OMD), idiopathic photoreceptor dysfunction, or central cone dystrophy is an unusual form of macular dystrophy where a progressive decline of visual acuity occurs with an essentially normal fundus and normal fluorescein angiography (FA) findings. The topography of the electroretinographic responses in the central visual field in three patients with OMD was examined by means of the multifocal electroretinogram (m-ERG). To evaluate the retinal pigment epithelium (RPE) and the choroidal circulation in OMD, indocyanine green videoangiography (ICG-V) was performed.

CASE 1
A 77 year old pseudophakic woman presented with progressive decreased visual acuity bilaterally of 10 years’ duration. The best corrected Landolt visual acuity was 20/250 right eye and 20/300 left eye. Visual field testing revealed central scotomas in both eyes. Fundus photography (Fig 1A), FA, and ICG-V were normal. Photopic ERG showed borderline amplitudes while scotopic ERG was normal. The Farnsworth–Munsell 100 hue tests showed several errors without any specific axis. The m-ERG exhibited markedly diminished responses in a relatively small circumscribed area in the macula (Fig 2A).

CASE 2
A 68 year old patient had blurred visual acuity for 10 years. The best corrected visual acuity was 20/200 right eye and 20/600 left eye. Fundus photography (Fig 2A), FA, and ICG-V were normal. Photopic ERG showed borderline amplitudes while scotopic ERG was normal. The Farnsworth–Munsell 100 hue tests showed several errors without a specific axis. There were central scotomas in the visual fields bilaterally. The m-ERG revealed marked depression of responses only in the macula (Fig 2B).
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Figure 1 Fundus photographs of cases 1 (A) and 2 (B) showing essentially normal findings.

COMMENT

Focal macular cone ERG is the key to the diagnosis of OMD. In our two patients, m-ERG activity was markedly diminished in a relatively small circumscribed area in the macula, suggesting limited functional defects in the fovea. Since no abnormality was found by ICG-V, or FA, the intact RPE may have a barrier effect to the underlying choroidal circulation. The pathology of OMD may involve the macular cone system without affecting the RPE and choroid. m-ERG can be useful for the differential diagnosis of OMD and can help map the topography of cone activity loss more precisely. m-ERG may aid in characterising the functional retinal topography in the near future.

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Kimura’s disease: no evidence of clonality

EDITOR,—Kimura’s disease is a chronic inflammatory disorder of unknown aetiology.1 Patients usually present with recurrent painless swellings in the subcutis of the head and neck region, increased serum IgE levels, and peripheral eosinophilia. The disease is described as reactive and data on clonality is absent. Here we describe a patient with Kimura’s disease involving the orbits. Clonality studies were performed by polymerase chain reaction (PCR) for immunoglobulin heavy chain (IgH), T cell receptor gamma (TCR-γ), and delta (TCR-δ) gene rearrangements.2–4

CASE REPORT

A 20 year old man presented with a 2 × 3 cm right eyelid swelling in 1986 with normal visual acuity and absence of diplopia. In 1993, he presented with progressive swelling in the right upper eyelid, which subsided with a short course of prednisolone (50 mg/day) and 1.2 × 10^7 respectively. Computed tomography scan of the abdomen revealed absence of intra-abdominal lymphadenopathy or organomegaly.

COMMENT

Neoplasia is characterised by clonal proliferation of cells and is most often demonstrated in cases of malignant diseases. However, monoclonality has also been demonstrated in some “benign” or “reactive” lymphadenopathy such as angioimmunoblastic lymphadenopathy and Castleman’s disease, both of which are associated with a tendency to aggressive lymphoma.5

Kimura’s disease runs an indolent course and has been described as a chronic inflammatory process reactive to some “unknown” stimuli.6 Our patient had a typical clinical presentation with recurrent lacrimal swelling and lymphadenopathy in the head and neck region. It ran an extremely indolent course and, despite the recurring nature of the disease, our patient remained so asymptomatic that he was lost to follow up for years. Interleukin-5 has been shown to be constitutively expressed and explains some of the features of the disease such as eosinophilia and elevated IgE levels.7

TCRδ gene has been shown by PCR amplification to be rearranged not only in clonal T cell disorders, but also in 73% of clonal B cell disorder.8 The PCR based methods for the IgH gene rearrangement is positive in 55–100% of various types of clonal B cell disorders.9 In our patient, the absence of

Figure 2 m-ERG of cases 1 (A) and 2 (B) showing decreased amplitudes of the wave patterns in the central 8° and 12° of the macula, respectively.

Figure 2 T1 weighted magnetic resonance image of the orbit showing a 2.5 cm diameter mass in the right lacrimal gland with thickening of the right superior rectus muscle.
clonal TCR and IgH gene rearrangements is consistent with the reactive nature of the disease. However, despite the relatively high sensitivity of these PCR based techniques to detect clonality, the finding should be confirmed by testing larger numbers of patients and Southern hybridisation with appropriate probes if DNA from fresh tissue is available.

In conclusion, our patient illustrates the typically indolent, recurring nature of the disease with lymphadenopathy and swelling confined to the head and neck region. The failure to demonstrate clonality is consistent with the reactive nature of the entity and the lack of report of malignant lymphoma transformation.

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COMMENT
Adequate retention of the prosthesis in the anophthalnic socket requires a well formed inferior fornix, which in turn requires sufficient conjunctival length and a deep recess. Obliteration of the inferior fornix might occur despite having a good amount of conjunctival tissue. This occurs possibly because of dehiscence of lower lid retractors, or development of scar tissue in the inferior recess that ultimately results in prolapse of the fornical conjunctiva and anterior rotation of the lower edge of the prosthesis. The long term effect exerted by the weight and pressure of an improperly accommodated prosthesis will result in secondary laxity of the lower lid.

The traditional solution to the above condition consisted of a lateral canthal tendon tightening and a fornix reformation using an externalised suturing technique in addition to alloplastic stenting material. Skin erosion and infection necessitated early removal of the externalised sutures and increased the risk of recurrence.

Another method of repair was described by Neuhaus and Hawes for the correction of the inadequate inferior cul de sac. It consisted of a transconjunctival inferior fornix incision used to gain direct exposure of the periosteum of the inferior orbital rim. Direct suture fixation of the edges of the conjunctival incision to the periostium is then achieved. Externally sutured and stents were not required. Out of 12 patients reported in the above paper, two developed mild lower lid retraction and two developed mild lower lid entropion. This is because the vertical length of the conjunctival tissue is not always sufficient to allow for fixation of both edges of the incision down to the periostium. Lower lid retraction or entropion occurs whenever the anterior edge of the incision is forced down and sutured under tension.

The technique described in this report makes the conjunctival incision just at the infratarsal border so as to save the maximum length of conjunctiva for the posterior flap. By this, the inner lid surface is left to heal by secondary intention. The tarsal strip procedure performed during the surgery aims to eradicate the lower lid laxity and sag.

In conclusion, this modified technique allows the use of internal fixation to correct the lower fornix while minimising the risk of lower lid retraction or entropion.

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Lymphocytoma cutis with conjunctival lesions

COMMENT

Lymphocytoma cutis is a reactive lymphoid hyperplasia. Lesions may be papular or nodular, solitary or multiple. Solitary nodular lesions may resemble cutaneous B cell lymphoma both clinically and histologically but behave in a benign manner. The condition most commonly affects the head and neck, and, as in our case, may be exacerbated by sun exposure. Other environmental factors have been implemented in the aetiology of lymphocytoma cutis including Borrelia burgdorferi infection, trauma, and certain drugs; however, most cases of lymphocytoma cutis are of unknown aetiology.

Mucosal membrane involvement with lymphocytoma cutis is extremely rare with only one previously reported case of lymphocytoma cutis affecting the conjunctiva in the German archives in 1935, although lesions affecting the oral mucosa have been more frequently described. However, the conjunctiva is a recognised site for primary B cell lymphomas, particularly MALT lymphomas. In our case the histology of both cutaneous and conjunctival lesions showed reactive lymphoid follicles with good preservation of the normal architecture, tangible body macrophages, and lack of bcl-2 positivity. In addition, analysis of the immunoglobulin heavy chain genes showed no evidence of a B cell clone, thus helping to exclude the diagnosis of a primary B cell lymphoma.

A foreign body reaction within the eye may also result in similar lesions both clinically and histologically to those of lymphocytoma cutis. However, there was no preceding trauma to the eyes and the fact the lesions are multiple, affect both eyes, and recurred after surgical excision makes the diagnosis of lymphocytoma cutis of conjunctiva more likely than a foreign body reaction.

Cases of lymphocytoma cutis with conjunctival lesions are extremely rare. In our patient the conjunctival lesions have persisted for a period of 8 years.

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Acute myelogenous leukaemia in an adult presenting with uveitis

EDITOR—Ocular involvement has commonly been reported in patients with acute leukaemias. Although acute lymphoblastic leukaemia (ALL) may present as uveitis, this presentation has rarely been reported in patients with acute myeloid leukaemia (AML). We describe an adult male who initially presented with an anterior uveitis followed by the rapid development of orbital involvement which was subsequently diagnosed with AML.

CASE REPORT

A 43 year old man presented to the emergency room with a 5 day history of photophobia and redness of the right eye with a precipitous decrease in vision over the previous 24 hours. He had been seen 2 days earlier by another ophthalmologist and was found to have retinal vasculitis and anterior uveitis. He was started on oral corticosteroids and referred to an internist for systemic examination for the presumptive diagnosis of Behçet’s disease. His medical history was remarkable for anal and mouth abscesses, 2 months before his visit.

On examination visual acuity was 6/60 right eye and 6/6 left eye. Ocular examination of the left eye was unremarkable. There was conjunctival injection, keratic precipitates, +2 anterior chamber cells, 360 degrees of iris synechiae, and an inflammatory membrane covering the anterior surface of the lens. The anterior chamber was deep and the intraocular pressure was within the normal range. Examination of the right eye revealed no eye lid swelling or protrusion. Funduscopic examination of the right eye was not possible because of the papillary membrane. A diagnosis of uveitis was made, an examination was begun including HLA B27 and HLA B51 and the patient was started on frequent topical corticosteroids.

Three days later the patient developed an acute onset of severe eyelid swelling, pain, and protrusion of the right eye (Fig 1). Visual acuity of the right eye was counting fingers and the patient had been seen 2 days earlier by another internist for systemic examination for the presumptive diagnosis of Behçet’s disease. His medical history was remarkable for anal and mouth abscesses, 2 months before his visit. A complete blood cell count (CBC) and peripheral blood smear revealed predominance of blast cells, and a diagnosis of AML was
made. B-scan ultrasonography of the right eye revealed vitreous opacities, a tractional retinal detachment temporarily, thickened ocular walls, and a mass lesion in the posterior orbit. An emergent computed tomograph scan confirmed the presence of an infiltrating orbital mass (Fig 2) and an urgent canthotomy, cantholysis, and orbital biopsy were performed. The biopsy demonstrated evidence of focal aggregates of mononuclear cells with cleaved nuclei consistent with leukemic infiltrate. With a presumptive diagnosis of orbital leukemic infiltrate, the patient underwent orbital irradiation in conjunction with systemic broad spectrum antibiotics. He responded rapidly with a decrease of lid swelling, proptosis, and tension. Orbital pressure within 24 hours. Immunohistochemical staining of the orbital biopsy was not able to demonstrate conclusively the presence of leukemic cells.

The patient subsequently underwent an unsuccessful bone marrow transplant, and died 3 months after the initial presentation. Postmortem examination of the orbital biopsy was not performed.

COMMENT

Although uveitis is commonly reported in children with relapsing acute leukemias, it rarely is the first presentation of AML. 1,2 Leukemic retinopathy, including haemorrhages, cotton wool spots, and retinovascular abnormalities are the most common ocular manifestations in patients with AML. 3,4 Anterior segment and vitreous findings are rarely described in these patients. In a prospective study of 56 patients with AML, 53% of the patients had ocular manifestations at the time of diagnosis, but none had anterior segment or vitreous involvement.

In our patient, the initial presentation with anterior iridocyclitis did not raise suspicion of malignancy. However, the recent medical history of anal and mouth abscesses in a previously healthy young man was suggestive of an immunocompromised host. The worsening of anterior chamber inflammation despite aggressive topical application of steroid was followed in several days by signs of rapid orbital involvement. Posterior segment involvement was not seen at the time of presentation because of a dense pupillary membrane, but was later documented on B-scan echography. The diagnosis of retinal vasculitis by the ophthalmologist most likely represented leukemic retinopathy secondary to perivascular infiltration by the leukemic cells. The orbital involvement in this patient may have been due to leukemic infiltration, orbital haemorrhage, or orbital cellulitis. Although the diagnosis of leukemic infiltrate was not immunohistochemically confirmed, the rapid response to irradiation, and the pattern of intraocular as well as retrobulbar involvement pointed towards this diagnosis.

The delay in the diagnosis of acute myeloid leukemia in our patient was minimised by the rapid progression of the disease, quickly leading to further investigations. However, the question arises whether an initial CBC should be performed on all patients with anterior iridocyclitis. In our institution, of 534 adult patients treated for uveitis over the past 3 years, five cases were secondary to intraocular tumours, and only the present case was associated with an acute leukemia. This low incidence argues against the use of a CBC for screening of previously healthy adults with typical anterior uveitis. However, in cases of worsening inflammation despite frequent topical steroids a CBC with smear may be recommended.

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Subretinal haemorrhage in idiopathic intracranial hypertension

EDITOR—Haemorrhage into the various spaces and potential spaces of the eye is a not uncommon finding in idiopathic intracranial hypertension (IIH), especially nerve fibre layer haemorrhages, a nearly constant feature of fully developed papilloedema. Less frequently reported are vitreous, subhyaloid, and subretinal haemorrhages. We present a patient with bilateral peripapillary subretinal haemorrhages as the prominent manifestation of IIH, whose haemorrhages resolved as her IIH improved.

CASE REPORT

A 41 year old obese woman was evaluated because of an unusual optic disc appearance bilaterally. One year before evaluation, she developed severe, diffuse headaches which would wake her from sleep. There were no associated visual symptoms. Brain computed tomography (CT) was normal. The headaches resolved spontaneously, only to recur months later, this time accompanied by blurred vision. She was seen by an optometrist, who noted “retinal bleeding”.

On examination she was obese but appeared well with a blood pressure of 130/90. Corrected visual acuity was 20/20 in both eyes, and colour vision was normal. Pupils were briskly reactive with no relative afferent pupillary defect. Ocular motility was normal. Automated perimetry revealed enlarged blind spots. There was minimal bilateral disc oedema with prominent surrounding subretinal haemorrhages (Fig 1). The haemorrhages spared the inferotemporal disc in the right eye and the temporal disc in the left. The macula, periphery, and vessels were normal.

B-scan ultrasonography revealed no evidence of optic nerve drusen. Fluorescein angiogram did not demonstrate neovascularisation. Magnetic resonance imaging (MRI) of the brain and orbits, with and without gadolinium, was normal. Lumbar puncture demonstrated an opening pressure of 280 mm CSF with normal contents. A diagnosis of IIH was made.

COMMENT

The differential diagnosis of subretinal haemorrhage is extensive. Among the more frequently cited aetiologies are trauma, choroidal tumour, aneurysmal subarachnoid haemorrhage, and retinal vascular disease such as diabetic or hypertensive retinopathy. Infrequently, subretinal haemorrhages have been reported in association with IIH. 1,2 All of these reports noted the additional features of either small anomalous discs or peripapillary subretinal neovascular membranes, the latter usually associated with chronic papilloedema. In our patient, there was no evidence of neovascular membranes, and the papilloedema itself was not prominent.


Figure 1 Fundus photographs demonstrating minimal disc oedema with prominent surrounding subretinal haemorrhages.

Over the next 2 years, the patient lost a total of 54 lb (24.5 kg), and took no new medications. On follow up examination, she reported normal vision and no further headaches. Her visual function was stable, and fundus examination showed near complete resolution of the subretinal haemorrhages (Fig 2).
Ocular haemorrhages are common in cases of aneurysmal subarachnoid haemorrhage occurring in 17% of cases. The haemorrhages may be subretinal, retinal, preretinal, or intravitreal. When subretinal, the haemorrhages are frequently peripapillary. It is now well accepted that the retinal haemorrhages seen in patients with aneurysmal subarachnoid haemorrhage are caused by acute elevations in the intracranial pressure with subsequent retinal venous hypertension. Acute increases in intracranial pressure induce a venous stasis retinopathy, which may result in intraocular bleeding.

Given that the mechanism of disc oedema in IIH is raised intraocular pressure, it would follow that retinal haemorrhages should be common in this disorder. Large vitreous bleeds, however, are very rare in IIH, as are subretinal haemorrhages, probably because of the chronicity and lack of sudden pressure elevation in IIH. Pre-existing communicating vessels between the retinal and choroidal circulations probably dilate in response to long standing papilloedema, creating opticociliary shunt vessels of varying sizes. Perhaps, these shunts unload the increased venous pressure on the retinal circulation, reducing the incidence of large intraocular haemorrhages from venous stasis retinopathy. An acute elevation in intracranial pressure in a patient with IIH may occur with coughing or other variants of the Valsalva manoeuvre. Such a precipitous rise in pressure could produce ocular haemorrhages of the type seen in our patient.

We believe our patient's elevated intracranial pressure probably caused prominent peripapillary subretinal haemorrhages with only mild disc oedema. Subsequent weight loss probably resulted in normalisation of her intracranial pressure, as it paralleled the resolution of her disc oedema as well as her headaches and visual complaints. Near complete resolution of the peripapillary haemorrhages accompanied the improvement in her symptoms. This case serves as yet another confirmation of the proposed mechanism of peripapillary subretinal haemorrhage as occurring secondary to raised intracranial pressure.

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Accidental instillation of N-butyl cyanoacrylate into the anterior chamber

Editor—Cyanoacrylate adhesive, a relatively inert material, may be very useful in sealing small corneal perforations. We report a case where accidental injection of N-butyl cyanoacrylate (tissue adhesive) through the corneal perforation into the anterior chamber resulted in complications and required surgical removal.

Case report
A 64 year old man with a history of left sided Bell's palsy of 6 months' duration had difficulty with left eyelid closure, requiring a suture tarsorrhaphy and placement of a gold weight in the left upper lid. He went on to develop a descemetocele of the left cornea which eventually perforated. N-butyl cyanoacrylate was applied using a cannula to the corneal perforation site and a bandage contact lens was placed. After noting that the adhesive had entered into the anterior chamber, he was referred.

On initial examination, best corrected visual acuity was right eye 20/25 and left eye hand movements. On slit lamp examination, the left cornea showed a central perforation with overlying cyanoacrylate adhesive which had extended down into the anterior chamber. The central iris was covered with adhesive (Fig 1), creating pupillary block. The patient was given preoperative intravenous mannitol and a penetrating keratoplasty was performed. The central iris was covered with adhesive and a penetrating keratoplasty was performed. The central iris was covered with adhesive and the lens was placed. After noting that the adhesive was firmly adherent to both the corneal endothelium and iris. After trephination, the adhesive was gently stripped off the iris (blunt dissection) using forceps. The lens had spontaneously expelled from the eye along with vitreous. After removing cortical remnants and performing an open sky anterior vitrectomy, a donor cornea was sutured in place. Eight months after surgery, visual acuity is 20/80 and the graft remains clear.

Comment
Tissue adhesives are relatively inert polymers which were first used in 1969 to seal a corneal perforation, thus eliminating the need for ocular surgery. In addition, tissue adhesives have been used in the ophthalmic setting for tarsorrhaphy, punctual occlusion, ptosis, retinal holes, and scleral thinning. With corneal perforations, the adhesive creates an inflammatory reaction and host fibrous tissue grows behind the adhesive filling in the gap. The adhesive should only be applied to perforations that are less than 1.5 mm in diameter and should not be used if there is prolapse of intraocular contents. For flat anterior chambers, air or viscoelastic should be removed first.

In animal experiments, small amounts of tissue adhesive injected into the anterior chamber created conjunctival vascular engorgement, mild self limited keratitis/uveitis, and localised corneal scarring; however, there was minimal ocular toxicity after 1 year. If injected in larger amounts, intense inflammation, corneal neovascularisation and necrosis, were seen. Other reported problems with the use of tissue adhesives include synechiae, giant papillary conjunctivitis, and retinal toxicity. In our case, the tissue adhesive created pupillary block. Because of the corneal perforation, intraocular pressure readings were unobtainable. After surgical intervention (penetrating keratoplasty, dissection of adhesive off the iris, self expulsion of lens, open sky vitrectomy), the patient remains comfortable with a clear corneal graft and a good chance of achieving excellent visual acuity. While accidental injection of tissue adhesive into the anterior chamber may be tolerated well with minimum complications, larger amounts should be removed first.

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Subretinal haemorrhage in idiopathic intracranial hypertension

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