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 coloboma 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 extending 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.

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

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. Pupillary examination showed an 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 slightly 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).

Fluorescein angiography showed an abnormal area of hyperfluorescence deep within the temporal aspect of the optic disc, which increased in the mid phase and stained in the late phase (Fig 2). There was no additional retinal pigment epithelial leakage point beneath or surrounding the detachment. Ul- trasonographic examination of the optic disc disclosed no notch or depression within the optic disc.

Two years later, the patient returned and stated that his vision had slowly normalised in the left eye. Repeat examination showed a visual acuity of 20/20 in the left eye with a normal appearing optic disc and macula.

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

The differential diagnosis of this patient’s disorder included occult optic pit, optic disc haemangioma, and a focal capillary leakage deep within the optic disc, with egress of fluid into the subretinal space. Occult optic pit and optic disc haemangioma were ruled out by clinical examination and by the complete resolution of the abnormal hyper- fluorescences on fluorescein angiography, suggest- ing the presence of a focal capillary leakage 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 formation of a macular star in the setting of neuroretinitis; however, transgression of fluid into the subretinal space is generally prohibited by the intermediary layer of Kuhnt.2 In this patient, an anomalous peripapillary area may have disrupted the normal barrier function of the intermediary layer of Kuhnt, providing a non-physiological conduit between the optic disc and the subretinal space.

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MICHAEL C BRODSKY
Department of Ophthalmology,
University of Arkansas for Medical Sciences,
Little Rock, Arkansas

Correspondence to: Arkansas Children’s Hospital,
800 Marshall, Little Rock, Arkansas 72202.

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Immunohistological 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. It occurs most often bilaterally in female children and is of unknown aetiology.1 It is a disease process may involve other mucous membranes, such as the cervix and the trachea, occasionally leading to death by tracheal obstruction.2 Few patients with adult onset ligneous conjunctivitis have been reported.3 They generally experience a milder course and systemic involvement is less common. Autoimmune dysfunction, infection with an unidentified virus, and an inherited predisposition possibly combined with trauma have all been proposed as possible causes for the disease.4–7 Recent studies have found an inherited defect in the plasminogen system of affected children.8 Treatment of the condition is problematic and often unsuccessful.6

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 2 Early phase fluorescein angiogram demonstrates deep hyperfluorescence within the temporal aspect of the left optic disc (A, 27.6 seconds), with increasing hyperfluorescence in the mid-phase (B, 54.8 seconds), and staining in the late phase (C, 240 seconds). Follow up angiogram 2 years later shows no residual abnormality (D, 39.9 seconds).
Figure 1 At the initial presentation of the patient a conjunctival injection and dense, membranous fibrosis of the upper lid were seen.

Figure 2 Stain with monoclonal antibodies against CK-MNF (pancytokeratin) (original magnification ×256). Expression of pancytokeratin is positive in vascular endothelial cells and surrounding muscle 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 granulomatous tissue involved in pancytokeratin and was similar to that found in epitheloid 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.


SONJA KLEIBE
Department of Ophthalmology, Humboldt-University of Berlin, Charité; Germany, Berlin and Department of Ophthalmology, Flinders University, South Australia, Adelaide

TONY WALKOW
CHRISTIAN HARTMANN
UWE PLEYER
Department of Ophthalmology, Humboldt-University of Berlin, Charité; Germany, Berlin and Department of Ophthalmology, Augustenburger Platz 1, D-13353 Berlin, Germany

Editorial—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 electroneoretinographic responses in the central visual field in three patients with OMD was examined by means of the multifocal electroneoretinogram (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 2/200 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).
Kimura's disease: no evidence of clonality

EDITOR,—Kimura's disease is a chronic inflammatory disorder of unknown aetiology. 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.***

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 × 1 week). He was lost to follow up until May 1997 when he developed recurrent swelling of the right upper eyelid. Excision biopsy of the right upper eyelid mass showed changes consistent with Kimura’s disease. DNA was extracted from lacrimal gland biopsy tissue.

Gene rearrangements for IgH gene, TCR-γ, and TCR-δ genes were tested by PCR but no clonal gene rearrangement was identified (Fig 1). In June 1998, he had recurrence of the right upper eyelid mass without any local or systemic symptoms (fever, night sweats, weight loss) and multiple left cervical lymph nodes measuring 1–2 cm in diameter. A complete blood examination showed haemoglobin 14.1 g/dl, platelets 282 × 10^9/L and leucocytes 18.4 × 10^9/L (differential: eosinophils 3.68 × 10^9/L, neutrophils 9.2 × 10^9/L, lymphocytes 1.5 × 10^9/L, and monocytes 4.02 × 10^9/L) (normal range: leucocytes 4.1–11 × 10^9/L, eosinophils 0.1–0.4 × 10^9/L). The IgE level was 10 328 IU/ml (normal range: <100 IU/ml). IgG, A, and M levels were normal. Urea, creatinine, albumin, and transaminase levels were within normal limits. Serology for HIV was negative. Magnetic resonance imaging (MRI) showed an oval mass in the right lacrimal gland and thickening of the right superior rectus muscle (Fig 2). After 3 weeks of prednisolone (50 mg/day), there was almost complete resolution of the lacrimal mass and IgE level and eosinophil count went down to 2860 IU/ml and 1.2 × 10^9/L 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.***

Kimura’s disease runs an indolent course and has been described as a chronic inflammatory process reactive to some “unknown” stimuli. 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 level.

TCR-δ 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 disorders. The PCR based methods for the IgH gene rearrangement is positive in 55%–100% of various types of clonal B cell disorders.*** In our patient, the absence of

**A**

500 nV

100 ms

**B**

500 nV

100 ms

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 1 Fundus photographs of cases 1 (A) and 2 (B) showing essentially normal findings.
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.

C S CHIM
University Department of Medicine, Queen Mary Hospital, University of Hong Kong, Hong Kong

R LIANG
University Department of Pathology, Queen Mary Hospital, University of Hong Kong, Hong Kong

Correspondence to: Dr C S Chim, University Department of Medicine, Queen Mary Hospital, University of Hong Kong, Hong Kong.

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Correction of the inadequate lower fornix in the anophthalmic socket

EDITOR.—A well formed inferior fornix in the anophthalmic socket requires an adequate amount of conjunctival tissue and a deep recess. Obliteration of the fornix might occur whenever the anterior edge of the prosthesis is not always sufficient to allow for fixation of both edges of the incision down to the periosteum. 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.

COMMENT
Adequate retention of the prosthesis in the anophthalmic socket requires a well formed inferior fornix, which in turn requires sufficient conjunctival length and a deep recess.

Correction of the inadequate lower fornix

Correction of the inferior fornix in the anophthalmic socket requires an adequate amount of conjunctival tissue and a deep recess. Obliteration of the fornix might occur whenever the anterior edge of the prosthesis is not always sufficient to allow for fixation of both edges of the incision down to the periosteum. Lower lid retraction or entropion occurs whenever the anterior edge of the incision is forced down and sutured under tension.

Another method of repair was described by Neuhaus and Hawes1 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 periosteum is then achieved. Externalised sutures 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 incision is not always sufficient to allow for fixation of both edges of the incision down to the periosteum. 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 of the lower fornix while minimising the risk of lower lid retraction or entropion.

RIAD N MALUF
Department of Ophthalmology, American University of Beirut-Medical Center, 113-6044 Beirut, Lebanon

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Lymphocytoma cutis with conjunctival lesions

EDITOR,—Lymphocytoma cutis is a benign lymphoid hyperplasia which typically occurs over the head and neck. We report a case of lymphocytoma cutis with conjunctival lesions; only one other case with lesions affecting the conjunctiva has previously been reported.

CASE REPORT

A 30 year old woman presented with a 10 year history of multiple erythematous papules over her nose, cheeks, and forehead. The papules were more numerous in the summer and the use of sun screens reduced the number of new lesions. Nine months earlier she had developed discrete pink conjunctival lesions. There was no previous history of trauma to the eyes. The lesions were asymptomatic and did not affect her vision. They were surgically excised for cosmetic reasons but reappeared within 2 months.

Examination revealed multiple 1–2 mm erythematous papules over her nose and cheeks. Three flesh coloured lesions were present on the right conjunctiva in the interpalpebral fissure, two medially and one laterally (Fig 1), and one on the left interpalpebral fissure. There was no lymphadenopathy or hepatosplenomegaly and a full blood count, biochemistry profile, and immunoglobulin profile were normal. Borrelia burgdorferi antibodies were not detected.

The histology of a papule from both the nose and conjunctiva was similar showing a discrete lymphoid aggregate with germinal centre formation, prominent tingible body macrophages, and a surrounding mantle zone. Immunohistochemical studies of these lesions demonstrated CD20, CD79a, and CD21 positivity; CD3 and CD10 positivity within the germinal centres; and CD5, bcl-2, and cyclin D1 negativity. There was no evidence of light chain restriction and immunoglobulin gene rearrangement studies were polyclonal on both cutaneous and conjunctival lesions using polymerase chain reaction (PCR) based techniques.

These histological, immunotopical, and genotypic studies are fully consistent with a diagnosis of lymphocytoma cutis.

The number of cutaneous lesions and prominence of conjunctival lesions increases during the summer and there has been some benefit in reducing the number of new cutaneous lesions with the use of sun screens.

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.1 The condition most commonly affects the head and neck and, as in our case, may be exacerbated by sun exposure.2,3 Other environmental factors have been implemented in the aetiology of lymphocytoma cutis including Borrelia burgdorferi infection,1 trauma,1 and certain drugs;4 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 1935,5 although lesions affecting the oral mucosa have been more frequently described.6 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, tingible 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.

JULIA J SCARISBRICK

GUY ORCHARD

ROBIN RUSSELL-JONES

Shin Tumour Unit, St John’s Institute of Dermatology, St Thomas’s Hospital, London SE1 7EH

Correspondence to: Dr Scarisbrick.

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Figure 1 Lesions of lymphocytoma cutis affecting the right conjunctiva.
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 leukaemic infiltrate. With a presumptive diagnosis of orbital leukaemic infiltrate, the patient underwent orbital irradiation in conjunction with systemic broad spectrum antibiotics. He responded rapidly with a decrease of lid swelling, proptosis, and the intraocular pressure within 24 hours. Immunohistochemical staining of the orbital biopsy was not able to demonstrate conclusively the presence of leukaemic 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. Leukaemic retinopathy, including haemorrhages, cotton wool spots, and retinovascular abnormalities are the most common ocular manifestations in patients with AML. 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 leukaemic retinopathy secondary to perivascular infiltration by the leukaemic cells. The orbital involvement in this patient may have been due to leukaemic infiltration, orbital haemorrhage, or orbital cellulitis. Although the diagnosis of leukaemic 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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HOSSEIN DANESHVAR
WILLIAM HODGE
STEVE GILBERG
The University of Ottawa Eye Institute, 501 Smyth Road, Ottawa, Ontario K1H 8L6, Canada

Correspondence to: Dr William Hodge.

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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 maculas, periphery, and vessels were normal.

B-scan ultrasonography revealed no evidence of optic nerve drusen. Fluorescein angiogram did not demonstrate neovascularization. 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 ophthalmic diagnoses 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. 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).

**Figure 2** Fundus photographs demonstrating near complete resolution of subretinal haemorrhages.
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 ocular 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 intraretinal bleeding.

Given that the mechanism of disc oedema in IIH is raised intracranial 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 subretinal haemorrhages, probably because of bleeds, however, are very rare in IIH, as are follow that retinal haemorrhages should be in IIH is raised intracranial pressure, it would occur in 17% of cases.

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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 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 reffered.

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. At the time of surgery, the cyanoacrylate 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, punctal 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 used 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 adhesive include symblepharon, giant papillary conjunctivitis, and retinal toxicity. In our case, the tissue adhesive created pupillary block. Because of the corneal perforation, intracorneal 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.

BRUCE M ZAGELBAUM
Department of Ophthalmology, North Shore University Hospital, New York University School of Medicine, Manhasset, NY, and Department of Ophthalmology, Mercy Medical Center, Rockville Centre, NY, USA

BRUCE H SCHWARTZ
Department of Ophthalmology, North Shore University Hospital, New York University School of Medicine, Manhasset, NY, USA

DAVID B NELSON
Department of Ophthalmology, North Shore University Hospital, New York University School of Medicine, Manhasset, NY, NJ, and Department of Ophthalmology, Mercy Medical Center, Rockville Centre, NY, USA

Correspondence to: Bruce M Zigelbaum, MD, 333 East Shore Road, Suite 202, Manhasset, NY 11030, USA.

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