LETTERS

Spontaneous venous pulsations should be monitored during glaucoma therapy

It is well established that lowering intraocular pressure slows or halts progression of glaucoma. None the less, changes in intraocular pressure also affect the pressure gradient across the lamina cribrosa. Normal intraocular pressures with low intraocular pressures produce the same pressure differential across the laminae as elevated intraocular pressures in conjunction with normal intracranial pressures. Failing to factor in both intraocular and intracranial pressures may create an inappropriate distinction in the pathogenesis of glaucomas currently labelled as normal tension from those where elevated intraocular pressures can be recorded. Development of the optic neuropathy in glaucoma may be secondary to mechanical deformation and destruction of lamina cribrosa causing axonal degeneration, or conceivably to pressure related ischaemic events. A goal of therapy in either situation should be equalisation of prelaminar intraocular pressure with opposing retrolaminar tissue and cerebrospinal fluid pressure.

Spontaneous venous pulsations occur when intraocular pressure during systole exceeds central retinal venous pressure, which, in turn, reflects intracranial pressure transmitted through the perineural subarachnoid space and retrolaminar tissue pressure. Lowering intraocular pressure until venous pulsations cease minimises the pressure gradient between mean intraocular and retrolaminar pressures. Without also lowering intracranial pressure to venous pulsations can be elicited by digital pressure. Keeping momentary fluctuations in mind, such end points may guide intraocular pressure lowering strategies to help avoid undertreatment of individuals with glaucoma. Therapies that lower intraocular pressure without also lowering intracranial pressure (such as topical rather than oral carbonic anhydrase inhibitors) should be favoured. The development of noninvasive methods for assessment of intracranial pressure and ocular hemodynamics should be considered to help avoid undertreatment. The question of whether intracranial pressure may be secondary to mechanical deformation and destruction of lamina cribrosa causing axonal degeneration, or conceivably to pressure related ischaemic events. A goal of therapy in either situation should be equalisation of prelaminar intraocular pressure with opposing retrolaminar tissue and cerebrospinal fluid pressure.

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Accepted for publication 21 August 2001

References

Acanthamoeba keratitis in Ghana

Suppurative keratitis due to Acanthamoeba spp is most commonly associated with poor contact lens hygiene. However, recently there have been reports of keratitis caused by Acanthamoeba spp in the tropics in non-contact lens wearers. We report one such case of Acanthamoeba keratitis in Ghana, west Africa.

Case report
A 25 year old male driver (from Accra) reported to a hospital in Bawku, northern Ghana. He presented with symptoms of chronic keratitis, over a period of 2 1⁄2 years; none of the patients was a contact lens wearer. However, 49% of the patients reported experiences of trauma to the affected eye. The first cases of Acanthamoeba keratitis in non-contact lens wearers in Africa were reported in Mali by Resnikoff et al. This group subsequently reported a further 22 cases between 1990–5. However, there have been no other reports, from Africa, of non-trauma related Acanthamoeba ulcers.

The case presented is the first report of a corneal ulcer caused by Acanthamoeba spp in Ghana and highlights the need to consider Acanthamoeba spp as a potential causative agent of chronic keratitis in patients presenting at rural hospitals in the tropics. In addition, the usefulness of simple stains such as lactophenol cotton blue and Gram stain to visualise Acanthamoeba spp is demonstrated as previously described in the literature.

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Accepted for publication 2 February 2002

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Need for measurement of porphyrins in teardrops in patients with congenital erythropoietic porphyria

Congenital erythropoietic porphyria (CEP: MIM #263700) is an extremely rare disorder inherited as an autosomal recessive trait. The cause of this disease is the deficient activity of uroporphyrinogen III synthase (UROS: EC 4.2.1.75). Since a cloning of UROS gene (UROS: Genebank NM000079), efforts have been made to clarify underlying mutations that cause CEP. To date, more than 20 mutations of UROS have been described. Identification of UROS mutations at the molecular level is important for genetic counselling and prenatal diagnosis of affected families.

Clinically, CEP is characterised by severe cutaneous photosensitivity, chronic haemolysis, and a characteristic porphyrinuria resulting from the accumulation in the bone marrow, peripheral blood, and other organs of large amounts of predominantly type I porphyrins, which are not substrates for haem synthesis. Red urine may be observed from infancy, and the teeth become stained red. Haemolytic anaemia, an additional complication, may be helped by splenectomy. Besides such classic manifestations ocular involvement, including scleral changes, has been reported in patients with CEP. Furthermore, we recently reported the evidence of the accumulation of porphyrins in teardrops in a Japanese patient with CEP who showed scleral changes. To confirm whether the accumulation of porphyrins is a common feature and is a direct cause of ocular involvement, we analysed and confirmed the presence of porphyrins in teardrops in an additional three Japanese patients with CEP.

Case reports

We analysed three Japanese patients with CEP, all of whom were diagnosed by their typical clinical manifestations and by the presence of porphyrins in teardrops in an additional three Japanese patients with CEP.

Table 1 Tear drop analysis of porphyrins in Japanese patients with CEP. Case 1 has been reported previously.

<table>
<thead>
<tr>
<th>Porphyrin</th>
<th>Case 1 [MT]</th>
<th>Case 2 [KN]</th>
<th>Case 3 [KK]</th>
<th>Case 4 [KT]</th>
<th>Control (n=2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uroporphyrin</td>
<td>1302.6 ng/dl</td>
<td>1235.3</td>
<td>3345.9</td>
<td>914.1</td>
<td>0</td>
</tr>
<tr>
<td>Heptaporphyrin</td>
<td>49.1</td>
<td>302.5</td>
<td>141.5</td>
<td>3.6</td>
<td>0</td>
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<tr>
<td>Hexaporphyrin</td>
<td>27.4</td>
<td>0</td>
<td>35.8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pentaporphyrin</td>
<td>24.6</td>
<td>67.9</td>
<td>109.5</td>
<td>4.9</td>
<td>0</td>
</tr>
<tr>
<td>Coproporphyrin I</td>
<td>108.1</td>
<td>348.8</td>
<td>285.9</td>
<td>21.4</td>
<td>0</td>
</tr>
<tr>
<td>Coproporphyrin II</td>
<td>11.2</td>
<td>32.5</td>
<td>28.6</td>
<td>6.4</td>
<td>0</td>
</tr>
<tr>
<td>Uroporphyrin</td>
<td>1363.3</td>
<td>59.9</td>
<td>59.2</td>
<td>16</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 1 Scleral involvement shown in case 2.

Comment

Sclerotic changes at the body surface lesions in CEP are mainly caused by the accumulation of porphyrins. Here, we demonstrated the first evidence that the accumulation of porphyrins in teardrops is a common feature in patients with CEP. No accumulation was observed in normal control, whereas the elevation of porphyrins in teardrops was observed in all patients with CEP. Furthermore, in case 4, who manifested relatively mild phenotype of ocular involvement, we showed mild accumulation of porphyrins, suggesting that the accumulation of porphyrins, especially uroporphyrin I and coproporphyrin I, were observed. Interestingly, in case 4, the accumulation of porphyrins was relatively mild compared with other patients.

Uveitis initiating an autoimmune reaction resulting in Goodpasture’s syndrome in a Chinese man

Goodpasture’s syndrome is an autoimmune disease caused by IgG directed against the alpha-3 chain of type IV collagen found in basement membrane. It causes pulmonary haemorrhage and renal failure. The antibody has been demonstrated in the basement membranes in the eye. However, ophthalmological complications in Goodpasture’s syndrome are rare. As with other autoimmune diseases, Goodpasture’s syndrome patients have a strong susceptibility based on a genetic background. Much evidence supports the concept that cross reactivity with exogenous epitopes or insult to the basement membrane can initiate the process of autoimmunity resulting in Goodpasture’s syndrome. We present a case of a Chinese man in whom we believe uveitis precipitated the autoimmune reaction causing Goodpasture’s syndrome.

Case report

A 77 year old Chinese man from Hong Kong presented to the eye casualty department...
with a 1 month history of a black patch in the centre of his visual field in the left eye. Before this he noticed floaters and a ‘black cloud’ in the left eye. He did not complain of pain or photophobia.

Three months earlier he had an episode of acute anterior uveitis, which resolved with dexamethasone and cyclopentolate drops. His vision at that episode was 6/24 in the right eye and 6/12 in the left eye. Six months earlier he had developed septicemia secondary to a urinary tract infection treated with a course of intravenous flucloxacinil and fusidic acid and he made a good recovery.

He came to the United Kingdom 30 years ago and returned to Hong Kong for holidays every few years. There was no family history of note.

He looked well on examination and he was appesysial. Systemic examination was unremarkable apart from an itchy rash on both his legs and his blood pressure was 104/60.

His visual acuity was 6/9, N6 in the right eye and CF, N36 in the left eye. His right eye was white and quiet with evidence of old keratitic precipitates (KPs) only. His left eye had mutton fat KPs with ++ cells in the anterior chamber. The right fundus had a healthy disc and retinal vessels, but there were tiny white lesions at the level of the retinal pigment epithelium (RPE) which could represent drusen. In the left eye he had ++ cells in the vitreous, and similar white lesions in the fundus. There were no haemorrhages or cotton wool spots.

The fluorescein angiogram of the right eye (Fig 1) showed multiple dots of hyperfluorescence under the neuroretina at the level of the RPE, which looked more like inactive disease of the RPE and choroid rather than drusen. There was no leakage from the disc, vessels, or macula. The left eye had a similar picture with a few dilated capillaries at the disc but no leakage at the disc or the vessels. Late pictures of the left macular reveal minimal cystoid macular oedema which was confirmed by OCT. The clinical differential diagnosis was sarcoid or tuberculosis.

Investigations revealed a raised erythrocyte sedimentation rate (ESR) of 64 in the first hour and C reactive protein (CRP) of 14, but all other blood tests were normal including his full blood count, liver function tests, urea and electrolytes, serum ACE, VDRL/TPHA, ANA, ANCA, ENA, and complement C3 and C4. The lumbar puncture results were also normal with no growth and three early morn- ing urine samples were also clear. The chest x ray was normal and a magnetic resonance imaging (MRI) of the orbits and head showed generalised ischaemia only. The Mantoux test was negative.

Investigations were unhelpful so he was treated symptomatically with dexamethasone 0.1% and cyclopentolate drops and an orbital floor injection of 40 mg of Kenalog (triamcinolone) in 1 ml.

The following week he was reviewed in clinic. His left eye had improved to 6/12, N8. However, he complained of generally feeling unwell with dizziness and nausea. There was no temperature or vomiting.

A blood test revealed that he was in acute renal failure with sodium of 125, potassium 6.9, urea 56.9, and creatinine 1681. ESR was 120, FBC 8.0, WCC 10.2, and platelets of 610. Liver function tests were normal apart from albumin of 21. He underwent haemodialysis and a renal biopsy showed Goodpasture’s disease (Fig 2). His glomerular basement mem- brane antibodies (ELISA confirmed by western blot) were also positive with a level of 77% (0–15 reference range), as were his PEG immune complexes. ANA, ANCA, and anti-DNA were all negative. He was given high dose steroids and had a course of plasma exchange (three 3 litre volume exchanges with FFP/PPF replacement).

His eyes continued to improve during the following month and the inflammation settled. At last review his visual acuity was 6/9 right eye and 6/12 left eye. Unfortunately, he developed haemoptysis and overwhelming septicaemia and died 2 months later. A post mortem was declined.

Comment

In 1919 Ernest Goodpasture described a patient with haemoptysis, anaemia, and proteinuria and a post mortem showing pulmonary alveolar haemorrhage and proliferative glomerulonephritis. Goodpasture’s disease, a rare autoimmune organ specific disease in which IgG antibodies are directed against the NCI domain of the alpha-3 chain of type IV collagen leading to pulmonary haemorrhage, glomerulonephritis, and renal failure. Good- pasture’s syndrome, however, describes Good- pasture’s disease with either haemoptysis or crescentic glomerulonephritis, or both. Clearly, this patient had the complete syn- drome. Thirty per cent of patients are ANCA positive and lung or kidney biopsy shows lin- ear immunofluorescent staining for IgG along the basement membrane. The death rate has drastically improved from 75% to 25% with the advent of plasmapheresis combined with immunosuppressants. However, it is rare to escape irreversible dialysis dependency unless the disease is detected and anti-GBM anti- body levels are reduced before oliguria has ensued.

Immunofluorescent and immunohisto- chemistry studies show that the deposition of the antimesangial basement membrane antibodies can also occur in the eye in the basement membrane of the choroidal vessels, ciliary body, lens capsule, and Bruch’s membrane. The pathogenic significance of this is still unknown. Furthermore, there have not been any studies confirming the actual presence of type IV collagen or of the alpha-3 epitope in the eye, although it is widely assumed that they are both present.

Documented ophthalmological abnormalities in Goodpasture’s include retinal haemor- rhages and exudates and serous retinal detachment. It is possible that these signs may reflect hypertension or ANCA positivity rather than direct damage from antiglomerular basement membrane antibodies possibly because of the small percentage of alpha-3 chain or its NCI domain in the eye. As the disease is so florid in the kidneys and the lung, one would expect a disease of similar severity in the eye if the antimesangial membrane antibodies were pathogenic in the eye.

This man had a granulomatous panuveitis with choroidal infiltrates. These ophthalmic features have not previously been described in Goodpasture’s syndrome. The serum from his initial admission with uveitis in February, 2 months after his episode of septicaemia, was normal apart from raised ESR and CRP levels and his antiglomerular basement membrane antibodies were 9%, which is within normal limits. Four weeks later in March, the titre of antibodies had risen to a grossly abnormal level of 77%. The temporal relation of developing antiglomerular basement membrane antib-odies and disease means it is likely that these complexes occurred in response to his septi- caemia and produced a reactive uveitis. As type IV collagen is also found in the choroidal plexus, the uveitis may have been type IV collagen to the immune system causing anti- body production which results in cross reac- tivity with the glomerular basement mem- brane in the kidney to produce Goodpasture’s syndrome. As with other autoimmune dis- eases, Goodpasture’s syndrome patients have a strong susceptibility based on a genetic background. Much evidence supports the concept that insult to the basement membrane or cross reactivity with exogenou-
epitopes can initiate the process of autoimmunity resulting in Goodpasture’s syndrome. Interestingly, uveitis and Goodpasture’s share some similar characteristics. The immunological profiles both involve the cytokines IL-6, IL-12, and TGF-β, and both are associated with HLA B7 (indicating a particularly poor prognosis in Goodpasture’s) and HLA DR 15. This case is extremely rare. Other events associated with the induction of anti-GBM disease in humans have included lung damage by infections such as influenza and toxin exposure with tobacco and hydrocarbons. Renal injury by ischaemia and membranous nephropathy can also induce disease. Other causes include lymphoma and adenoma. To our knowledge this is the first reported case where uveitis was the likely precipitating factor for the induction of Goodpasture’s disease. Moreover, ophthalmologists should be aware of all blood test results and check the results of ordered tests. They should follow up the patient with repeated history and examination and repeat tests if the diagnosis is uncertain. Unsuspected fatal diseases as we have seen in this case, may occasionally present to ophthalmologists.

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Accepted for publication 17 April 2002

References

Fusarium solani keratitis following LASIK for myopia

Fungal keratitis is a rare complication of photorefractive keratectomy (PRK), LASIK, and LASIK enhancement. We describe a patient who developed keratitis in one eye after bilateral LASIK procedures. The keratitis progressed despite intensive topical and systemic antibacterial and antifungal treatment. Initial cultures were negative, but a diagnosis of fungal keratitis was suggested by confocal microscopy. Fusarium solani was isolated following penetrating keratoplasty.

Case report
A 45 year old woman noted blur and discomfort of the right eye 3 days after bilateral LASIK procedures for myopia. The visual acuity was 6/9–3 unaided and there was a 1.5 mm diameter infiltrate beneath the flap (Fig 1A). The left eye was unaffected with an unaided visual acuity of 6/6. Cultures were not taken for her topical antibiotic was changed from chloramphenicol to ofloxacin, and dexamethasone 0.1% four times daily was continued. After a further 4 days the vision had reduced to 6/12 and there was ulceration through the flap over the infiltrate; treatment was changed to hourly gentamicin 1.5%, cefuroxime 5%, and econazole 1%, and dexamethasone was continued to reduce the risk of further flap melt. A culture from the ulcerated corneal surface over the infiltrate was negative. There was continued deterioration and treatment was therefore stopped for 24 hours before the flap was lifted and cultures taken for routine bacteriology, acid fast bacilli (Mycobacterium), and fungi. No organism was identified. Because of the uncertain diagnosis a loading oral dose of fluconazole 200 mg was given followed by 100 mg daily, and a 7 day course of intensive topical vancomycin (5%) and amikacin (2.5%) was started with oral clarithromycin 500 mg twice daily. Confocal microscopy of the edge of the lesion demonstrated filamentary structures in the deep stroma (Fig 1B), but a subsequent tissue biopsy of the flap and the deeper stroma was again negative. Despite intensive treatment with topical amphotericin (0.15%) and sodium hyaluronate (5%), and courses of oral itraconazole (400 mg daily) and voriconazole (400 mg daily) there was continued deterioration and the cornea perforated (Fig 1C). On the 32nd day following LASIK a 9 mm penetrating corneal graft was performed and the anterior chamber was irrigated with amphotericin (5 µg in 0.1 ml). Dexamethasone 0.1% four times daily was continued after surgery to treat severe intraocular inflammation. Histology of the excised corneal section showed filamentary fungal elements anterior to Descemet’s membrane but no evidence of hyphae extending to the margin of the excised tissue. Fusarium solani was subsequently grown from the corneal button and the isolate was reported sensitive in vitro to amphotericin (1.0 µg/ml), partially sensitive to clotrimazole (8 µg/ml), econazole (4 µg/ml), and miconazole (8 µg/ml), and resistant to itraconazole (>16 µg/ml) and fluconazole (>16 µg/ml). Despite continued topical and oral antifungal treatment, two further penetrating grafts were necessary to remove recurrences at the graft interface. Following the last graft topical steroids was substituted with topical cyclosporin A 2% four times daily for 4 weeks, after which fluorometholone 0.1% four times daily was started to control inflammation and prevent vascularisation. All topical antifungal treatment was stopped after 3 months. The final vision at 8 months was reduced to 6/60 as a result of irregular corneal astigmatism, cataract, and graft oedema.

Comment
Fungal keratitis is rare in the United Kingdom but accounts for 17–37% of microbial keratitis isolates in warmer countries. To date all reported cases of fungal keratitis after LASIK have been due to filamentary organisms. The diagnosis may be difficult to confirm as cultures and biopsies of the anterior stroma can be negative because of the tendency of filamentous fungi to proliferate in the posterior corneal stroma. A delay in identification of the causative agent often contributes to the poor outcome. Of the four previously reported cases of presumed flap interface infection, excisional keratoplasty was required in three, and perforation and vascularisation of the corneal occurred in one. The only case with a medical cure had a surface infection of a persistent epithelial defect.

The origin of this infection is uncertain. The patient had visited Florida 2 months previously, where Fusarium sp is the most common isolate from cases of fungal keratitis. On the day of treatment the ambient temperature in London was 80°F, but subsequent air culture plates from the treatment area and from the air conditioning system were negative. Because of a reluctance to disturb the LASIK flap there is a temptation to treat infiltrates empirically with broad spectrum antibiotics and steroid, rather than lifting the flap to culture the lesion directly. Unfortunately, in this case, two cultures were negative, and the diagnosis of a filamentary fungal infection was suggested by confocal microscopy. A further negative biopsy then delayed a decision for surgical intervention. Corticosteroid may...
increase the virulence of pathogenic fungi and it is normally contraindicated in fungal keratitis, although it has a role in reducing inflammation after antifungal treatment has been started. The role of cyclosporin A as an alternative to steroid after surgery for fungal keratitis requires further evaluation.

Acknowledgement
Mr John Dart provided helpful advice with the management of this case.

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Accepted for publication 17 April 2002

References

Uveal metastasis 43 years after resection of bronchogenic carcinoid
Carcinoids are a heterogeneous group of tumours believed to arise from enteroendocrine cells scattered primarily throughout the gastrointestinal tract, but these tumours are also found at other sites such as the lungs. Although the term carcinoid underscores the benign nature of the tumour with an indolent course, its potential for metastasis is widely recognised.

The most frequent sites for metastasis include the lymph nodes, liver, and bone. Metastasis to the eye and orbit is rare. Gastrointestinal carcinoids tend to metastasise to the orbit while bronchial carcinoids have the propensity to metastasise to the uvea. The interval between diagnosis of the primary tumour and the recognition of ocular or orbital metastasis varies. The longest reported interval is 24 years for intraocular metastasis, and 15 years for orbital metastasis. We report on a patient with metastatic carcinoid to the uvea occurring 43 years after excision of the primary bronchial carcinoid and confirmed by histological and immunohistochemical tests, and we propose a mechanism for such delayed metastasis.

Case report
A 63 year old white woman was found to have a superiorly located choroidal mass in the right eye and an inferonasal elevated mass in the left eye on routine examination. Medical history is significant for the diagnosis in 1958 of bronchial adenoma, presently known as bronchial carcinoid. The patient underwent lung surgery, details of which are unavailable. She denies any history of smoking. The bronchial carcinoid recurred in 1965 and a right lower lobeectomy was performed. The histopathological diagnosis was bronchial adenoma, cylindroid type, with metastasis to the peribronchial lymph node of the basilar segments.

On initial examination, visual acuity was 20/25 in each eye. Fundus examination of the right eye revealed a lightly pigmented dome-shaped golden brown mass at the 12 o’clock position involving the pars plana ciliare and peripheral choroid. Echography revealed a solid ciliary body and peripheral choroidal mass lesion located superiorly with an elevation of 4 mm and a base diameter of 8 mm. Internal reflectivity was medium to high, with a moderately irregular internal structure. The left eye was unremarkable.

Figure 1 Fundus photograph of the left eye with a non-pigmented orange-reddish lesion.

Figure 2 Carcinoid tumour showing infiltrating cells with trabecular, tubular, cordlike or rosette-like pattern (haematoxylin and eosin; original magnification ×100 [A]. Carcinoid tumour showing immunoreactivity with synaptophysin (original magnification ×100) [B]. Immunoreactivity with chromogranin (original magnification ×100) [C]. Tumour cells showing membrane bound electron dense intracytoplasmic granules (original magnification ×30 000) [D].

PostScript

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Comment
Notwithstanding their metastatic potential, carcinoids are compatible with long term survival (as attested by our patient’s case). To our knowledge, the 43 year interval between diagnosis of the patient’s primary tumour and recognition of uveal metastasis is the longest interval reported to date. Low immunoreactivity to Ki-67 and non-reactivity to p53 may possibly explain the indolent course of this tumour and its metastasis many years after the resection of the original tumour. Ki-67 is a DNA binding nuclear protein that is expressed in proliferating cells but not in quiescent cells. It is regarded as a fractional measure of tissue and tumour growth. P53, a tumour suppressor gene, is the most commonly mutated gene in tumours; its functional inactivation can bring about abnormal cell proliferation. Occasional staining of the patient’s tumour to Ki-67 and the negative staining of the tumour to p53, as well as its histologically well circumscribed appearance, demonstrate low proliferative activity and low aggressiveness. These biological factors may have played a part in the delayed metastasis of the patient’s tumour.

TTF-1 is a nuclear transcription factor primarily expressed in the lungs and thyroid. Its expression may be useful in determining the primary site of a metastatic neuroendocrine tumour. However, expression of TTF-1 in primary or metastatic pulmonary carcinoids varies anywhere from completely negative to 44% to a high of 80%. Despite a clinical history of the primary tumour arising from the bronchus, the patient’s metastatic lesion like those reported by Fabbro et al. exhibited no staining to TTF-1. Likewise, the tumour’s histological trabecular pattern and negative serotonin staining favour the bronchus as its site of origin. Although bilateral ocular involvement suggests the diagnosis of a metastatic process, the 43 year long interval since resection of the bronchial carcinoid led to the clinical impression of uveal melanoma. Consequently, this case suggests that carcinoid tumours can metastasise as much as four decades after bronchial carcinoid led to the clinical impression of bronchus as its site of origin. Negative serotonin staining favour the bronchus. Likewise, the patient reported foreign body sensation in the right eye. Slit lamp examination demonstrated 3+ conjunctival injection, 3+ anterior and posterior synechiae, and ulceration of the cornea. The patient was again hospitalised and antimycotic eyedrops were added.

Figure 1
(A) Left eye, February 2001: clinical aspects of the first examination: blepharitis with retinitis pigmentosa, subnormal dark adaptation, and post-cataract extraction staphylomacular endophthalmitis may also occur.

We describe the first case of recurrent severe bilateral corneal ulcerations with perforation in a female patient with keratosis follicularis.

Case report
A 74 year old woman was referred to the university eye hospital with complaints of redness and reduced visual acuity in the left eye. She had no significant ocular history. She and her two daughters have been suffering from keratosis follicularis (Darier-White disease) for many years.

On first examination (February 2001) best corrected visual acuity was 0.8 in the right eye and 0.3 in the left eye. Both eyes showed pathological Schirmer’s tear test. Microbiological examination of the conjunctiva indicated Staphylococcus aureus, Streptococcus epidermidis, and Streptococcus viridans. The left eye was treated with ofloxacin and cyclosporin A eye drops. Additionally, both eyes were treated with artificial tears, and the clinical picture slowly improved over the next 9 days.

Four weeks later (March 2001) visual acuity was 0.7 in the left eye. Examination of the left eye revealed corneal staining and thinning at the 6 o’clock position. There were no signs of inflammation. Antibiotic therapy was discontinued.

Seven weeks later (April/May 2001) the patient reported foreign body sensation in the right eye. Slit lamp examination demonstrated 3+ conjunctival injection, 3+ anterior chamber cells, ulceration of the cornea at the peripheral 6 o’clock position, a descemetocele, anterior and posterior synchiae (Fig 1B). The aspect of the left eye was similar to the previous examination 7 weeks earlier.

The patient was again hospitalised and placed on topical ofloxacin and mydriatics. Microbiological examination indicated again Staphylococcus aureus, and additionally Candida albicans and Blastomyces. Therefore, topical antmyotic eyedrops were added. During follow up the corneal infiltration and intraocular inflammation in the right eye slowly reduced.

Nine weeks after discharge (August 2001) the patient returned to the hospital. She reported burning of the right eye for 5 days. The therapy with ofloxacin had been discontinued 3 weeks previously, only the therapy with artificial tears had been continued.
Visual acuity was 0.02 in the right eye and 0.7 in the left eye. The right eye showed 3+ conjunctival injection, 3+ anterior chamber cells, and ulceration of the cornea. A corneal perforation at the peripheral 6 o’clock position was closed by an incarceration of the iris. The patient was discharged and was again controlled by her ophthalmologist.

Comment
We report a 74 year old woman patient with recurrent bilateral corneal ulceration and unil-ocular perforation probably associated with keratitis follicularis.

Keratitis follicularis (Darier-White disease) is caused by mutations in the ATP2A2 gene, which encodes the Ca^2+ ATPase 2 isoform. This defect results in disturbed cell to cell adhesion and differentiation of the epidermis.

Histopathological hallmarks of the disease are focal suprabasal clefting due to acantholysis, and subsequent dyskeratotic round epidermal cells (“corps ronds”) with overlying columns of parakeratosis.

In our patient the recurrent corneal ulcerations with subsequent perforation could be explained by the participation of the ectodermal ocular tissues in keratitis follicularis: the lacrimal gland, the eyelids, and the corneal epithelium. A combination with Sjögren’s syn-drome, dry eyes, oral mucosal lesions, and involvement of the salivary gland is known from the literature. A histological examination of the eyelids in one patient showed a characteristic epidermal involvement, but no participation of the specific adnexal glands of the lid margin. It was presumed that the knob-shaped lid margin could provoke symptoms and sequelae similar to seborrhoeic blepharitis. Recurrent localised or widespread cutaneous viral infections and secondary bacterial overgrowth is also common. Bacteria and fungi can colonise the keratotic debris.

In our keratitis follicularis probably resulted in dry eye syndrome with reduced corneal protection and microbiological colonisation of the skin and ocular surface. Impaired folliculation of the limbal stem cells of the cornea epithelium caused the recurrent corneal ulcerations with perforation. Therefore it can be concluded that the increased risk of ocular complications in keratitis follicularis may include severe corneal infection. Beside the long term dermatological medical care an intensive ocular therapy with lubricants and antibiotics may help to avoid this ocular complication.

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Accepted for publication 29 April 2002

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Uveal melanoma: Finland v India
We have read with great interest the article by Eskelin and Kivelä. This study provides information as to how uveal melanoma can be diagnosed and treated early if fundus examination is done by an ophthalmologist and also emphasises the racial differences in presentation of this disease: a review of the clinical features in 163 patients. J Am Acad Dermatol 1992;27:40-50.

We are highly impressed by their results as none of the patients had implant extrusion. This is really commendable since implant extrusion rates have ranged from 9% to 21% in previous studies, and it indicates meticulous technique and follow up. We would like to clarify a few pertinent issues.

Although bovine pericardium is generally considered non-reactive, it has been reported to produce severe inflammatory reactions in cardiac use. Another area of major concern with cardiovascular use of bovine pericardium has been the development of calcification seen in both laboratory studies and clinical observations. It is still uncertain what impact such a calcification would have on an orbital implant and assessment of its effect would certainly require studies with a larger number of patients and longer follow up. However, it has been suggested that it may hamper its motility. We suggest that the possibility of misinterpretation of imaging findings in cases of orbital recurrence of tumours should not be overlooked.

Another crucial area of concern is the risk of infection with xenografts, which cannot be totally eliminated even by highly stringent screening and processing procedures. We are referring to the group of bovine spongiform encephalopathies including Creutzfeldt-Jakob disease (CJD) and its variant found in the United Kingdom (vCJD).

Therefore, the quest for a comparable synthetic wrapping material and better implants which do not require wrapping continues, and bovine pericardium should be considered, bearing in mind its above mentioned shortcomings.

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References
TTT for occult CNV: check the power!

Transscleral thermotherapy (TTT) was originally introduced for the treatment of small choroidal melanoma. Although the precise mechanism of action for this treatment is unknown yet, the reported data appear to be beneficial compared to the natural course of the disease.

Currently, the following treatment parameters are recommended to treat occult choroidal neovascularisation (CNV) with TTT: one exposure, 60 second exposure time, 800 mW power for the 3 mm spot, 530 mW for the 2 mm spot, and 320 mW for the 1.2 mm spot. With these parameters applied via the Goldmann fundus lens the power per field is calculated to be 247 mW/mm². This usually results in no visible change of the treated area at the end of exposure. Thus, if the applied power would be inadvertently lowered to 800 mW for the 3 mm spot (or the power equivalent for other spot sizes) the treating physician would not notice he has to compensate for the lower power by adjusting the instrument’s power level.

We have used a diode laser (Iridex Corporation, Mountain View, CA, USA) with the recommended fibreoptic adapter since 1997 for the treatment of choroidal melanomas and have not encountered any problems. Following the report by Reichel and coworkers, we started treating patients with occult CNV according to the recommended treatment parameters described above.

However, we did not observe satisfactory functional results in the majority of the first consecutive 28 cases treated and in most cases no effect could be demonstrated with the fluorescein angiogram or OCT.

Lacking any possible explanation other than that the treatment method didn’t work, we again asked a technician to check the laser. Immediately after the laser had been damaged by its frequent use in treating patients with choroidal tumours. However, this remained unnoticed by the oncologist because in treating choroidal melanomas the end point of an exposure is invisibly visible to white lesion. If this is not achieved with the initially chosen power level, the physician usually increases the power in a stepwise manner until this end point is reached.

In summary, we highly recommend to all physicians who are treating occult CNV with subthreshold TTT to check their aiming spot regularly, especially if the system has been in use for a longer time. Additionally, the output power of the entire application system (laser and fibreoptic) should probably be rechecked at regular intervals depending on the frequency of the instrument’s use. This might prevent future reports of the (“false negative”) inefficacy of this possible beneficial treatment method.

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**BEAVRS Meeting**
The next BEAVRS meeting will be held in the Dalmahoy Hotel near Edinburgh on 31 October to 1 November 2002. Further details: Susan Campbell, Medical Secretary, Gartnavel General Hospital (email: susan.j.campbell.wg@northglasgow.scot.nhs.uk).

**Cornea 2002—Celebrating 50 Years of Eyebanking**
The Cornea 2002 meeting will be held in Le Meridien Hotel, London, Gatwick on 14–15 November 2002. Subjects to be covered will include eye banking, penetrating and lamellar keratoplasty, stem cell restoration, keratoprosthesis, advanced keratoplasty techniques, paediatric cornea, keratorefractive surgery, and intraocular refractive surgery. Spaces are limited and a beneficial package rate is available prior to 30 September 2002. Further details: CORNEA 2002 organiser at the Corneal Plastic Unit, The Queen Victoria Hospital, Holtye Road, East Grinstead, West Sussex, RH19 3DZ, UK (tel: 01342 410 210 ext 560; fax: 01342 317 181; email: cornea2002@hotmail.com).

**Introductory Course in Osteo-odonto-keratoprosthesis (OOKP)**
The University of Brighton Postgraduate Medical School is holding an introductory course in osteo-odonto-keratoprosthesis (OOKP) 20–21 November 2002 in the New Seminar Room, Sussex House, Brighton & Sussex University Hospitals Trust in Brighton. The course will comprise of a variety of lectures with live surgery, two way audio and video links (Stage 1 and Stage 2 OOKP surgery), and examination of patients. Further details: Mrs Erica Strange, University of Brighton, Postgraduate Medical School, Falmer Campus, Brighton, East Sussex BN1 9PH, UK (tel: +44 (0)1273 644 005; fax: +44 (0)1273 644 002; email: e.strange@brighton.ac.uk).

**23rd Annual Conference and Dinner Glaucoma Society (UK & EIRE)**
The 23rd Annual Conference and Dinner of the Glaucoma Society will be held on Thursday 21 November 2002, 8.30am to 5.00pm at the Central Conference Centre, London. The Annual Dinner is from 6.30pm to 10.00pm at The Royal College of Surgeons, London. Conference charges: £60 members; £80 non-members. Price entitles delegates to refreshments, lunch, abstract book, programme, and annual dinner. (Maximum number of places 250—apply now to secure your place). Further details: Janet Flowers, Administrator, 29 Quarry Hill, Grays, Essex, RM17 3BT, UK (tel/fax: 01375 385172; email: glausoc@ukeire.freeserve.co.uk).