LETTERS TO THE EDITOR

Resolution of calcific band keratopathy after lowering elevated serum calcium in a patient with sarcoidosis

EDITOR,—Calcific band keratopathy and its relation to hypercalcaemia is well known, but resolution following correction of a high serum calcium level is rare. We report a case where such resolution was documented using corneal light scattering measurements in a patient with sarcoidosis.

CASE REPORT
A 32-year-old man presented with a 6 month history of blurred vision in both eyes but no photophobia or ocular discomfort. Three months earlier he had developed a right sided facial palsy which resolved spontaneously over 2 weeks. His medical history was notable for weight loss of 12 kg over the previous 6 months, excessive thirst, a dry cough, and shortness of breath on exertion.

General examination was normal. The best corrected visual acuities were 6/12, N8 right, 6/9, N6 left. Yellow nodules were present in the inferior fornices of both eyes. Both corneas had interpalpebral calcific band keratopathy and occasional mutton fat keratic precipitates (Fig 1A). A mild anterior uveitis was present but examination of the vitreous, fundus, and ocular motility was normal.

The clinical diagnosis of sarcoidosis with hypercalcaemia was supported by findings of bilateral hilar lymphadenopathy on chest x ray; raised angiotensin converting enzyme level (188 IU/l; normal range under 53 IU/l); and abnormal liver and renal function tests. The corrected serum calcium was elevated at 3.56 mmol/l (normal range 2.1-2.5 mmol/l) with a normal serum phosphate and albumin. The diagnosis was confirmed histologically by biopsy of a conjunctival granuloma.

The patient was treated with intravenous rehydration and high dose systemic steroids (80 mg orally tapered over 6 months). Within 1 week his general condition had improved and his serum calcium was normal. Almost complete resolution of the band keratopathy (Fig 1B) and improvement of the visual acuity to 6/6, N4-5 in both eyes occurred over the following 6 months. Corneal light scatter (glare) measurements confirmed the resolution of his band keratopathy (Fig 2).

In those systemic diseases where band keratopathy arises as a result of hypercalcaemia a period of observation is indicated, following normalization of serum calcium, before considering surgical or excimer laser therapy, as the keratopathy may improve as happened in this case.

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Pseudoexfoliation material on an acrylic lens

EDITOR,—We report deposition of pseudo-exfoliative material on the anterior surface of an acrylic posterior chamber intraocular lens which has been observed for 5 years. The morphological pattern of radial striations closely resembles that normally seen on the crystalline lens and detailed examination of the distribution pattern suggests that deposition has occurred in areas exposed to highest flow of aqueous humour.

CASE REPORT
A 59-year-old Somali seaman presented in January 1980 with a 2 year history of decreased vision in the left eye caused by calcific band keratopathy. Excimer laser examination was otherwise unremarkable and he had extracapsular cataract extraction from the left eye in August 1980. The procedure was uneventful. A Pearce tripod posterior chamber intraocular lens was inserted into the capsular bag inferiorly and the sulcus superiorly.

In June 1990 following dilatation of the left pupil pseudoexfoliative material was found on the temporal half of the anterior surface of the intraocular lens (Fig 1). Radial striations were observed, similar to those commonly seen in

COMMENT
Calcific band keratopathy is associated with systemic conditions causing hypercalcaemia or raised serum phosphate and a number of chronic ocular conditions, including glaucoma, uveitis, corneal infections, and long term intraocular silicone oil. Sarcoidosis is the most common cause of hypercalcaemia associated with band keratopathy and is thought to be due to activated pulmonary macrophages producing 1,25 dihydroxy-vitamin D. In patients who have sarcoidosis with ocular involvement, hypercalcaemia occurs in 17% but calcific band keratopathy is rare occurring in only 4-5% of cases. The deposition of calcium salts is dependent not only on the solubility product of calcium and phosphate being exceeded, but also on altered tissue physiology and raised pH which occurs interpalpebrally and accounts for the distribution of band keratopathy.

Patients may be asymptomatic or complain of reduced vision or glare, and if the calcium breaks through the corneal epithelium it causes ocular discomfort. It is widely assumed that when calcific band keratopathy is present the only effective treatment is surgical or excimer laser therapy. There have been two case reports of early band keratopathy improving with treatment to lower the serum calcium (one associated with renal failure and one with hypervitaminosis D) (1). This is the first reported case of advanced band keratopathy resolving in a patient with sarcoidosis. Photography and glare measurements using a PC generated flickering glare source, were used to document improvement. The latter is a measure of visual impairment due to ‘forward scattering’ of light by corneal opacities. It is a more sensitive measure of the effect of corneal opacities on visual function than Snellen visual acuity and may be useful in deciding an endpoint to treatment (Fig 2).

Figure 1 (A) Interpalpebral calcific band keratopathy at presentation with a serum calcium level of 3.56 mmol/l. (B) Resolution of calcific band keratopathy after 3 months of treatment with a tapering course of oral prednisolone and a normal serum calcium.

Figure 2. Glare (upper two lines) and Snellen visual acuity (lower two lines) measurements over the treatment period. Glare of under 50% standardized grey units is normal.
pseudoexfoliative material on a crystalline lens. The pattern of deposition has remained remarkably constant over the subsequent 4 years (Fig 2). Local extension was noted at position A in 1992 but no further change had occurred by 1994. This is the only definite progression in deposition we have identified. The consistency of the pattern between 1990 and 1994 is particularly obvious at positions B, C, and D. Pseudoexfoliative material was first noted on the pupil margin and on the anterior iris surface in this eye only in 1994 (Fig 3A).

Extracapsular lens extraction with peripheral iridectomy was performed in the right eye in 1991. No pseudoexfoliative material was observed in that eye until 1994 when heavy deposits were noted at the edges of the peripheral iridectomy (Fig 3B). Deposits have not been noted on the intraocular lens in this eye. There is no pseudoexfoliative material on the posterior corneal surface or in the chamber angle in either eye but there is heavy angle pigmentation. Intraocular pressures remain normal in both eyes.

**COMMENT**

Pseudoexfoliative material has been reported on the anterior hyaloid face following intraocular surgery in 1990 and there is one report of diffuse deposition on the anterior surface of a posterior chamber lens where the posterior capsule was intact. It has also been noted on the posterior surface of three posterior chamber lenses following posterior capsule disruption.3

While our case resembles that of Ringvold and Bore2 with anterior surface deposition and intact posterior capsule, it clearly shows the additional feature of radial striations in the pattern normally seen on the crystalline lens.4 (As in Ringvold and Bore's case we detected scanty deposits in the undilated pupil zone.) The sectoral distribution of the deposit is interesting. This temporal sector was the only area free of peripheral adhesion between iris and capsule and was therefore presumably subjected to greatest flow of aqueous humour. If deposition is indeed related to aqueous flow it might also explain the radial striations which lie along the direction of flow. The absence of material on the lens implant in the right eye, if not simply a feature of the shorter interval following surgery in this eye, might be explained by a lower rate of aqueous flow over the implant surface. This eye had no peripheral adhesions of the posterior iris surface which might channel and enhance the flow in a specific sector. With the pupil undilated the iris in each eye seemed equidistant from each quadrant of the lens implant. There has been little change in the pattern of deposition over a 5 year period. Ten years after implantation deposition on the lens appears to have reached equilibrium, but deposition on the iris was not seen until a further 4 years had passed. The acrylic lens in the right eye shows no material at 3 years after lens extraction, although heavy iris deposition has developed. Ringvold and Bore noted deposition on a lens implant only 18 months after surgery.

It is generally agreed that pseudoexfoliative material is produced by both the lens epithelium and other intraocular tissues. Pseudoexfoliation appears to be a systemic connective tissue metabolic disorder, perhaps resulting in the disordered synthesis or assembly of microfibrils. Pseudoexfoliative material is produced by a variety of different cell types such as epithelial cells, fibroblasts, and all types of muscle cells, and is found not only throughout the orbit,5 but widespread in the body6 of patients with pseudoexfoliation syndrome.

Our observations confirm that pseudoexfoliative material produced by one intraocular tissue can be deposited on remote structures including a polymethyl methacrylate lens.

We acknowledge the photographic work of Ian Smith and John McCormick.

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displacing the lid skin

1 Figure left
ocular cicatricial
left

Fig 1B

(B) Computed
tomography

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4 Duke-Elder S. Diseases of the lens and vitreous; glaucoma and hypotony. In: System of ophthal-
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6 Schlotzer-Schrehardt U, Koka MR, Naumann GOH, Volkholz H. Pseudoexfoliation syn-
drome: ocular manifestation of a systemic dis-

Giant dacryops in a patient with ocular
cicatricial pemphigoid

EDITOR,—The term 'dacryops' was intro-
duced by Schmidt in 1803 when he described
cysts arising from the palpebral lobe of the
lacrimal gland.1 Its formation is believed to be
caused by occlusion of the lacrimal duct
openings due to conjunctival inflammatory or
traumatic changes followed by dilatation of the
inflamed and weak duct walls. Conditions
such as trachoma which cause conjunctival
scarring have been reported as antecedents of
ductal cyst formation.2 Ocular cicatricial
pemphigoid (OCP), a relatively rare, chronic,
progressive disease causing significant con-
junctival scarring to our knowledge has not
been documented as a cause of dacryops. We
describe a patient with OCP who had a giant
cyst on his left upper lid which was proven on
histopathology to be a lacrimal duct cyst.

CASE REPORT
A 63-year-old male patient, diagnosed 16
months earlier as having OCP, developed
massive swelling of the left upper lid over
1 month (Fig 1A). No improvement was
noted with either antibiotic or steroid
treatment. B-scan ultrasound demonstrated a
cystic lesion which on aspiration revealed 6 ml
of clear yellow fluid. The decompressed cyst
reformed within 24 hours. A computed tomo-
gram showed that the cystic mass, which mea-
sured 3-4×1-8×1-8 cm, was confined to the
left preseptal space slightly displacing the left
eyeball posteriorly (Fig 1B). The patient
underwent total excision of the cyst through
a lid crease incision. The cyst was noted to be
posterior to the markedly attenuated levator
aponeurosis and Müller's muscle, adherent
to the superior border of tarsus, and in a
subconjunctival location. A portion of the
palpebral lobe of the lacrimal gland to which
the cyst was attached was also excised.
Histopathology showed the cyst wall (Fig 2A)
and dilated ducts of the lacrimal gland
with surrounding acute and chronic non-
granulomatous inflammatory reaction (Fig
2B) consistent with a diagnosis of lacrimal
duct cyst with dacryoadenitis. No recurrence
of the cyst was noted for the next 3 months.

COMMENT
Ocular cicatricial pemphigoid is a chronic
disease characterised by conjunctival shrink-
age, entropion, trichiasis, xerosis, and corneal
opacification causing blindness.3 Fibrous
occlusion of the lacrimal ducts in OCP can
cause decreased aqueous tear production.
The development of lacrimal duct cyst, how-
ever, has not been described as a common
finding. Cyst formation as a result of collec-
tion of tears proximal to the obstruction does
not readily occur because obliteration these
ducts leads to gland atrophy and cessation of
secretion.1

In this patient we believe that the dacryops
originated from an inflamed main lacrimal
gland duct containing tears produced by the

Figure 1A

Figure 1 (A) A 63-year-old male patient with
ocular cicatricial pemphigoid and a giant cyst on
the left upper lid. His left eye was covered by the
left upper lid cyst that caused stretching of both
the lid skin and the upper palpebral conjunctiva.
(B) Computed tomography scan demonstrates
the preseptal location of the cystic mass (arrow)
displacing the left globe posteriorly.

Figure 2A

Figure 2 (A) Portion of the giant cyst wall with surrounding haemorrhagic connective tissue
containing inflammatory cells. (Haematoxylin and eosin, ×15.) (B) Part of the main lacrimal gland
showing moderate infiltration of lacrimal gland acini with acute and chronic inflammatory cells.
(Haematoxylin and eosin, ×38.)
Office of Continuing Medical Education

An update on the management of age-related macular degeneration will take place on 7–8 June 1996 at the Johns Hopkins University School of Medicine, Johns Hopkins Medical Institutions, Baltimore, Maryland, USA. Further details: Office of Continuing Medical Education, Johns Hopkins Medical Institutions, Turner 20, 720 Rutland Avenue, Baltimore, MD 21205–2195, USA. (Tel: (410) 955–2959; Fax: (410) 955–0807.)

International Society of Dacryology

The IVth International Congress of the International Society of Dacryology will be held in Stockholm on 9–11 June 1996. Further details: Dr G B van Setten, St Eriks Eye Hospital, Fleminggatan 22, S-112 82 Stockholm, Sweden.

The Brian Harcourt Memorial Symposium

The 7th Brian Harcourt Memorial Symposium will take place on 2 July 1996. The symposium topic will be glaucoma. Further details: Mr Mitchell Ménage, Eye Department, Leeds General Infirmary, Clarendon Wing, Belmont Grove, Leeds LS2 9NS. (Tel: 0113 243 2799; Fax: 0113 292 6479.)

International Congress New Developments in Ophthalmology 1996

An international congress on 'New developments in ophthalmology' will be held on 29–31 August 1996 in Nijmegen, the Netherlands. Further details: Professor dr AF Deutman/Mrs Y Hennink, University Hospital, Department of Ophthalmology, PO Box 9101, 6500 HB Nijmegen, the Netherlands. (Tel: (31)24 361 5105; Fax: (31)24 354 0522.)

Baylor/Welsh Cataract & Refractive Surgical Congress 1996

The Baylor/Welsh Cataract & Refractive Surgical Congress 1996 will be held at the Hyatt Regency Hotel, Houston, Texas on 5–7 September 1996. Further details: Eula Mae Childs, Cullen Eye Institute, Baylor College of Medicine, 6501 Fannin (NC200), Houston, TX 77030, USA. (Tel: 713-708-5941; Fax: 713-798-4364.)

International Symposium on Fluorescence Angiography

The International Symposium on Fluorescence Angiography will be held at the University of St Gall, St Gall, Switzerland on 8–12 September 1996. Further details: ISFA '96, c/o AKM Congress Service, Clarastrasse 57, PO Box, CH-4005 Basel, Switzerland. (Tel: ++41 61 691 51 11; Fax: ++41 61 691 81 89.)

British and Eire Association of Vitreo-Retinal Surgeons (BEAVRS)

The next meeting of the British and Eire Association of Vitreo-Retinal Surgeons (BEAVRS) will be held at the Manor House Hotel, Morehampstead, Devon on 17–18 October 1996. Further details: Mrs Jill Gedhiill, Torbay Hospital, Lawes Bridge, Torquay TQ2 7AA. (Tel: 01803 654825; Fax: 01803 655011.)

2nd International and 4th European Congress on Ambulatory Surgery

The 2nd International and 4th European Congress on Ambulatory Surgery will be held at the Queen Elisabeth II Conference Centre, Westminster, London on 15–18 April 1997. Further details: Congress Secretariat, Kite Communications, The Silk Mill House, 196 Huddersfield Road, Meltham, West Yorkshire HD7 3AF. (Tel: +44 1484 854575; Fax: +44 1484 854576.)

Correction

Unfortunately, one of the authors of a letter (Resolution of calcific band keratopathy after lowering elevated serum calcium in a patient with sarcoidosis) which appeared in the November issue of the BJO (Johnston et al, p 1050) was left out. She is Melanie C Corbett, Medical Eye Unit, St Thomas’s Hospital, London. We apologise for this omission.

Correction

Owing to a computer error the wrong graphical material appeared in Figure 1 of the paper by Damato et al (Risk factors for residual and recurrent uveal melanoma after trans-scleral local resection), in the February issue of the journal (BJO 1996; 80: 102–8). The correct version of this figure is given below.

Figure 1 Kaplan-Meier curves showing the percentage of eyes without recurrent tumour according to tumour cell type. Local recurrence was more common with mixed and epithelioid tumours than with spindle cell tumours.