Sections through the excised internal limiting membrane (ILM). (A) Staining with periodic acid Schiff reagent and haematoxylin reveals convoluted ILM with adjacent cells. (B) High-power view of section in (A) to show that the cells are on the undulated (retinal) surface of the ILM (arrows) whereas no cells are seen on the smooth (vitreous) surface (arrowheads). (C) Stained with the immunoperoxidase technique for cytokeratin 7 (red-brown chromogen) and counterstained with haematoxylin: layers of transdifferentiated retinal pigment epithelial (RPE) cells are observed (arrows). Inset: higher magnification demonstrates that the RPE cells are adjacent to the undulated (retinal) surface of the ILM (arrow). (D, E) Sections stained with the immunoperoxidase technique (red-brown chromogen) for the glial marker glial fibrillary acidic protein (D) and the macrophage marker CD68 (E), respectively, and counterstained with haematoxylin. (D) Glial cells are abundant in the tissue but have a distribution different from that of RPE cells (compare with C). (E) Macrophages are more scattered throughout the tissue. (F) A section stained with Perls method reveals iron of presumed blood origin (blue deposit; arrow) as well as melanin pigment (arrowhead).

instead of an ERM there was a mixed-cell-type proliferation on the retinal surface of the ILM. The sub-ILM cells included trans-differentiated RPE cells, and hence the proliferation had the histological appearances of a proliferative vitreoretinopathy (PVR)-type membrane "beneath" the ILM. Presumably, the RPE cells had been attracted to this location by the sub-ILM blood, since it is well established that RPE cells migrate to various blood components and can move through intact retina 5.

Intraretinal pathology in PVR is a well-recognised pathological event, but usually the retinal changes resemble gliosis 6. Our case suggests that focal RPE proliferation, similar to that seen in PVR epiretinal membranes, can occur within the neuroretina, and specifically in a sub-ILM location, by transmigrated RPE cells as a response to intraretinal haemorrhage. Such proliferation might prevent complete visual recovery after reabsorption of the retinal haemorrhage and justify early surgical intervention instead of routine observation or laser membranotomy.

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Lemon juice and Candida endophthalmitis in crack-cocaine misuse

The Centers for Disease Control and Prevention recently reported that a substantial number of drug misusers in the US are injecting crack-cocaine instead of smoking it,¹ owing to the decreased availability and increased cost of powdered cocaine. The use of lemon juice to dissolve crack-cocaine has been shown to cause abscesses, permanent vein damage and infections.² Furthermore, heroin dissolved in preserved lemon juice was documented to be a source of *Candida albicans* in multiple, small epidemics of fungal endophthalmitis in the 1980s in the UK and Australia.^{3,4} We report here two recent cases of fungal endophthalmitis in crack users who similarly disclose dissolving crack-cocaine in lemon juice injection.

Case 1

A 34-year-old male intravenous drug user presented to his primary care physician with high fever and bilateral blurry vision for the past 20 days. Blood cultures and ECG were negative. The patient reported dissolving crack in preserved lemon juice.

His visual acuity was 20/40 OD and 20/70 OS. Dilated fundus examination revealed multiple condensations in the vitreous with choroidal and retinal foci in both eyes. A pars plana vitrectomy was performed OD with intravitreal injections of vancomycin (1 mg/0.1 ml), ceftazidime (2 mg/0.1 ml) and amphotericin B (7.5 µg/0.1 ml). Vitreous cultures grew *Candida albicans*, and the patient was treated with oral diflucan (200 mg daily). The patient received five intravitreal injections of amphotericin B (5 µg/0.1 ml) in the vitrectomised right eye and three in the non-vitrectomised left eye over 3 weeks for persistent active lesions. At the most recent examination, 12 weeks after presentation, the patient's vision was 20/20 OD and 20/50 OS.

Case 2

A 37-year-old homeless male intravenous drug user reported a 3-month history of decreased vision, eye pain and floaters in his right eye. His medical history was significant for HIV (recent CD4 count of 799 cells/mm³) and hepatitis C. The patient reported the use of preserved lemon juice to dissolve crack-cocaine for injection.

His visual acuity was hand motions OD and 20/20 OS. Dilated fundus examination of the right eye was obscured by 3+ vitritis, but there appeared to be a large infiltrate in the macula. A vitreous aspiration was performed, with intravitreal injections of ceftazidime (2 mg/0.1 ml) and vancomycin (1 mg/0.1 ml) in the right eye. The vitreous aspirate grew *C. albicans*.

Amphotericin B (5 mg/0.1 ml) was injected, and the patient was admitted for intravenous fluconazole (400 mg four times a day). Blood cultures and ECG were negative. A therapeutic vitrectomy with a lensectomy was performed. Ten days postoperatively, the patient's vision improved to 20/400 OD, with a decrease in inflammation and resolution of the infiltrate, whereas the left eye was unchanged. The patient was unfortunately lost to follow-up.

Comment

Potential sources of infection in injecting drug users are the impure drug itself, poorly disinfected skin at the site of injection, unsterile preparation of the drug, and/or contaminated needles or syringes. This report raises the possibility that the lemon juice used to dissolve crack-cocaine might be another risk factor for fungal infection. In treating injecting drug users, ophthalmologists should inquire about the use of preserved juices. If used, this should raise the concern of fungal endophthalmitis. Furthermore, when an injecting drug user is infected with fungal endophthalmitis, it might be recommended to advise other users, who share the lemon juice, of the risk for endophthalmitis. Finally, public health efforts to decrease the morbidity of intravenous crack-cocaine use should discourage users from dissolving crack-cocaine in lemon juice. In fact, outreach programmes in certain inner cities are distributing packets of ascorbic acid to injecting drug users.

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NOTICES

Glaucoma

The latest issue of *Community Eye Health* (No 59) discussing new treatments for glaucoma in the developing world, with an editorial by leading specialist Richard Wormald. For further information please contact: Journal of Community Eye Health, International Resource Centre, International Centre for Eye Health, Department of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, UK (tel: +44 (0)20 7612 7964; email: Anita.Shah@lshtm.ac.uk; online edition: www.jceh.co.uk). Annual subscription (4 issues) UK £28/US\$45. Free to developing country applicants.

9th IOIS International symposium

The 9th International ocular Inflammation Society international symposium will be held in Paris from 17-20th September 2007. For further information on registration please call +33 (0)1 70 08 69 82, or fax +33 (0)1 42 93 29 28, or email andrelamy1@wanadoo.fr. Or you can visit the website www.iois-paris-2007.com.

IAPB 8th General Assembly – 2008

The 2008 International Agency for the Prevention of Blindness Eighth General Assembly: "Excellence and Equity in Eye Care" will be taking place at the Centro de Convenções Rebouças, in Sao Paulo, Brazil on 28th July-2nd August. For further information please email: agency@lvepei.org.

Teaching courses on Retinal and Vitreous Surgery

Several teaching courses on Retinal and Vitreous Surgery have been organised throughout 2006 and 2007 around the world in association with the International Faculty. For further information on each of these courses please contact Ingrid Kressig, Univ.-Augenlinik Theodor-Kutzer-Ufer 1-3, 68164 Mannheim, Germany; email: Ingrid.kressig@augen.ma.uni-heidelberg.de; website: http://kressig.uni-hd.de/.

Second Sight

Second Sight would like to hear from experience Indian eye surgeons returning to India after training/working in the UK. Second Sight is a London based charity dedicated to the elimination of cataract blindness in India. For further information please contact Dr Lucy Mathen, email: lucymathen@yahoo.com.

A practical clinical approach to the diagnosis and management of intraocular inflammation and infection with lots of patients

The above course will be held at Moorfields Eye Hospital, London on 8-9th June 2007. The program will cover international faculty, lectures on key topics, patient examination with the faculty helping you, workshops with patients and interactive cases covering other key areas. For further information please email s.mayhew@ucl.ac.uk.

Ocular Motor Tonus Symposium

The proceedings of the Ocular Motor Tonus Symposium in 2006, sponsored by the Smith-Kettlewell Eye Research Institute, can be access on the Smith-Kettlewell website, http://www.ski.org.