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Yoga can be dangerous—glaucomatous visual field defect worsening due to postural yoga

The relationship between the head-down body position and increased IOP is well known.[1–6] We present a 46-year old woman who presented with a worsening of glaucomatous visual field defects one year after starting to perform regularly a particular postural headstand yoga exercise, reversible after cessation of the exercise.

In 10 non-yoga-practising volunteers intraocular pressure (IOP) was measured by Tono-Pen in sitting and immediately after assuming a headstand position. A more than twofold increase of the IOP was measured in the headstand position. Therefore postural (head-down) yoga exercises are clearly not recommended for patients suffering from glaucoma.

Case report

A 46-year-old Caucasian woman followed at our clinic for a bilateral juvenile open-angle glaucoma presented on a routine examination a significant worsening of her visual field defects on both eyes (fig 1). Twenty years previously a bilateral trabeculectomy had been performed and since then intraocular pressures had always been stable without treatment (between 14 and 16 mm Hg). Slit-lamp examination revealed no apparent reason for the visual field deterioration. Detailed history taking finally showed that she had started one year previously (shortly after the last visual field examination) regularly to practise yoga, particularly a headstand position, called ''sirsasana''. Measurement of the IOP by Tono-Pen in the headstand position showed a twofold increase of IOP compared to IOP in the sitting position (32 compared to 16 mm Hg). We asked the patient to stop any yoga exercise with the head-down position and some months later the visual field defects improved significantly.

Comment

Postural yoga (''asanas''), including headstand posture (''sirsasana''), is along with breathing exercises (''pranayama'') and meditation (''dhyana'') one of the three basic components of hatha yoga, the system on which much of western yoga is based. Yoga has become a popular practice in the western world. In 1998 an estimated 15 million American adults had used yoga at least once in their lifetime, 7.4 million during the previous year.[7] Sirsasana is a preferred position that seems to induce euphoria and comfort after performing the posture.[6]

To evaluate the increase of IOP due to headstand position we measured IOP in 10 non-yoga-practising volunteers (4 women and 6 men, mean age 37.3 $\pm$ 11.3 years) in a sitting position and immediately after assuming a headstand position. IOP was measured by a single examiner using the Tono-Pen XL (Medtronic Solan, Jacksonville, Florida) in the left eye after application of oxybuprocaine 0.4% eye drops. IOP was measured four times consecutively and the mean IOP was calculated. All volunteers were in good health and did not present any known ocular pathology. The mean sitting IOP was 13.9 $\pm$ 1.76 mm Hg (range: 10.75–18.5). Immediately after assuming a headstand position the mean IOP increased to 31.8 $\pm$ 4.22 mm Hg (range: 23–38.75). These findings agree with a recent study (including 75 experienced yoga practitioners) that recorded a uniform twofold increase in the IOP during sirsasana, which was maintained during the posture and returned to near baseline level immediately after resuming a sitting posture.[6] Increased IOP has been explained with raised episcleral venous pressure[1] or increased choroidal volume by vascular engorgement.[8 9]

This case shows once more the importance of a good history taking and how sometimes unexpected personal habits can influence ophthalmologic pathologies. Patients suffering from glaucoma should be advised against practising postural (head-down) yoga exercises.

Dimiter Robert Bertschinger, Efstratios Mendrinos, André Dosso
University Eye Clinic, Geneva, Switzerland

Correspondence to: Dimiter Robert Bertschinger, University Eye Clinic, 22 rue Alcide Jentzer, 1211 Geneva 14, Switzerland; dimiter.bertschinger@hcuge.ch

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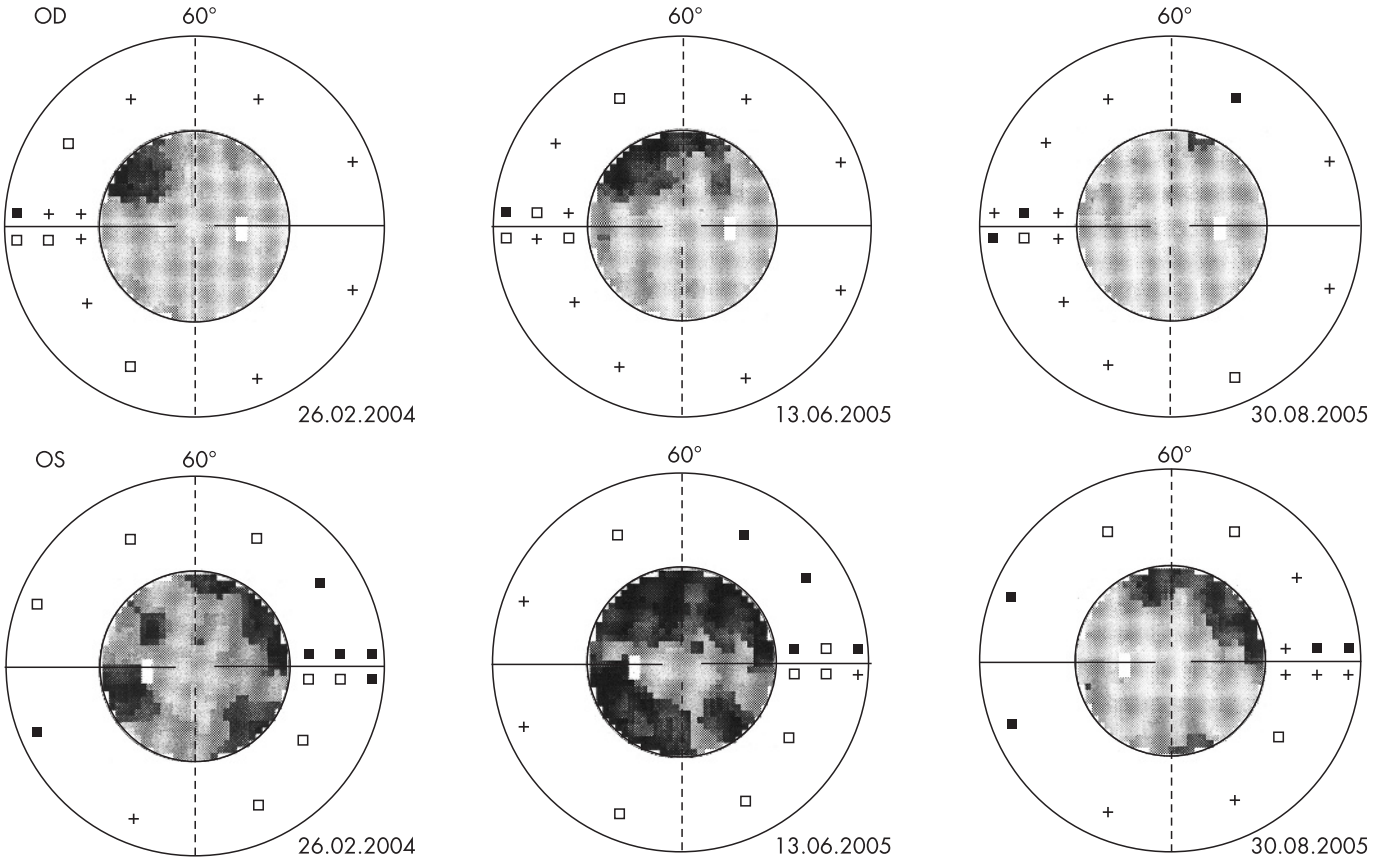

Figure 1 Visual field some months before and one year after starting postural yoga and one year after stopping it.

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Rituximab treatment for peripheral ulcerative keratitis associated with Wegener's granulomatosis

Rituximab is a chimeric antibody against CD20 aimed at depleting B cells. While originally developed as a treatment for B cell lymphomas, it was recently found to be useful in managing autoimmune diseases including refractory Wegener's granulomatosis.[1–3] We report a case of refractory peripheral ulcerative keratitis (PUK) associated with Wegener's granulomatosis that was successfully treated with rituximab.

Case report

A 57 year old man with longstanding Wegener's granulomatosis was admitted to the hospital with severe pain and blurred vision in the left eye as well as respiratory compromise because of tracheal blood clots. He had a past history of haemorrhagic cystitis while on oral cyclophosphamide and pancytopenia while on methotrexate. The diagnosis of anterior nodular scleritis and PUK was made. Treatment with intravenous methylprednisolone and monthly intravenous cyclophosphamide with mesna was initiated for immediate control. While the scleritis resolved promptly, the patient had progressive peripheral corneal thinning and vascularisation. In spite of high dose oral steroids as well as anti-collagenase therapy with vitamin C and doxycycline, a chronic epithelial defect developed and the corneal thinning continued to advance (fig 1).

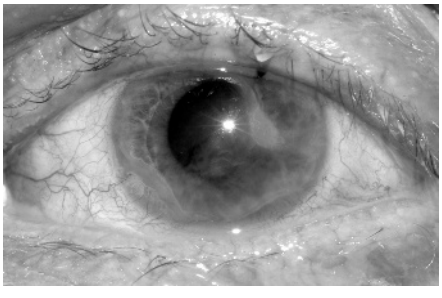

Figure 1 Left eye with progressive peripheral ulcerative keratitis. An epithelial defect is present at the leading edge of the corneal thinning superotemporally. Vascular infiltration is best seen inferonasally.

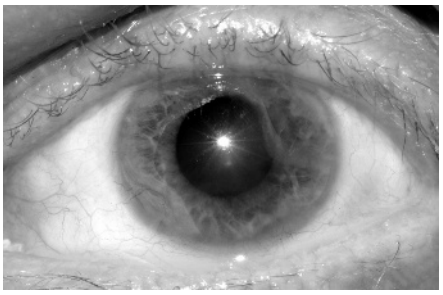

Figure 2 Left eye after treatment with rituximab. The epithelial defect has healed, the corneal thinning has stabilised, and corneal vessels have started to regress.

Because of concern over the progression of PUK and the lack of response to standard treatment, the patient received two 1000 mg infusions of rituximab separated by one week. After one week, the epithelial defect had completely resolved and the progression of corneal thinning ceased (fig 2). The eye remained stable and the patient reported significant improvement in respiratory symptoms. During a three month follow up period, the patient has been maintained free of symptoms on prednisone 10 mg daily and topical prednisolone acetate twice daily.

Comment

Rituximab is a chimeric monoclonal antibody against CD20, a marker expressed by all B cells before they mature into plasma cells. This new biological therapy acts by depleting the body's B cells and was adapted from oncology to treat autoimmune diseases. Rituximab has a good side effect profile largely limited to hypersensitivity reactions and a small increase in serious infections.[2 4] The onset of action is as rapid as one to two weeks[1 3] and anecdotal evidence is emerging that it can be successful in inducing lasting remission in cases refractory to other drugs. Experience in inflammatory eye disease is still sparse and we found a single case report of recalcitrant scleritis associated with Wegener's granulomatosis that responded to rituximab.[5] In the case we describe here, the scleritis responded to high dose cyclophosphamide and steroids, but the PUK continued to progress until treatment with rituximab was initiated. While further studies are needed to determine the optimal indications and dosing for this drug, we believe that rituximab is a promising form of treatment for refractory ocular inflammation.

Julie Freidlin, Ira G Wong, Nisha Acharya
F I Proctor Foundation, 95 Kirkham Street, University of California, San Francisco, CAlifornia, USA

Correspondence to: Nisha Acharya, F I Proctor Foundation, 95 Kirkham Street, University of California, San Francisco, CA 94143, USA; Nisha.Acharya@ucsf.edu

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Informed consent was obtained for publication of figures 1 and 2.

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NOTICES

Second Sight

Second Sight would like to hear from experienced 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.
Further details: Dr Lucy Mathen, lucymathen@yahoo.com.

2008 International Agency for the Prevention of Blindness (IAPB) 8th General Assembly

28 July–2 August, Centro de Convenções Rebouças, Sao Paulo, Brazil
Further details: Email: agency@lvpei.org.

Singapore National Eye Centre – 18th Anniversary International Meeting

14–17 March 2008, Suntec City Convention Centre, Singapore.
Further details: Tel: +65 6322 8374; Fax +65 6227 7290; Email meet@snec.com.sg.

Inaugural Asia Cornea Society Scientific Meeting

13–14 March 2008, Shangri La's Rasa Sentosa Resort, Singapore.
Further details: Fax +65 6227 7291; Email acs@snec.co.sg.

International Ocular Blood Flow Symposium

13 October 2007, Sutton Place Hotel, Toronto, Canada.
Further details: Tel: +416 978 2719 or +1 888 512 8173; Fax +416 946 7028; Email ce.med@utoronto.ca.

Neuro-Ophthalmology and Strabismus – 2008 European Professors in Ophthalmology (EUPO) Residents' Course

5–6 September 2008, Geneva, Switzerland.
This course organised by Professor Avinoam B Safran will provide an overview and an update on recent advances in neuro-ophthalmology and strabismus.
Further details: http://eupo.eu.