Long term effect of repeated hyperbaric oxygen therapy on visual acuity in inflammatory cystoid macular oedema
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LETTERS TO THE EDITOR

Long term effect of repeated hyperbaric oxygen therapy on visual acuity in inflammatory cystoid macular oedema

EDITOR,—Cystoid macular oedema is a well known complication of chronic uveitis and is the major cause of visual disability accounting for 29% of blindness and 41% of visual impairment in this group.1

Therapy consists of control of inflammation with both topical and systemic agents. Symptomatic treatment with acetazolamide orally and grid laser photocoagulation have been shown to reduce cystoid macular oedema as well as vitrectomy.2

Treatment of cystoid macular oedema has been reported with good results by hyperbaric oxygen, but only limited follow up was presented.3,4

CASE REPORT
In 1986 a 46-year-old woman developed bilateral posterior uveitis with vitritis in a periphlebitis of unknown origin. Routine uveitis screening disclosed no abnormalities. Despite locally administered drugs, high doses of systemic prednisolone, and acetazolamide cystoid macular oedema increased and persisted. Grid laser treatment of the right macula resulted in resolution of the cystoid macula oedema but did not improve visual acuity. Cyclosporine was added to therapy with no positive results; later it had to be withdrawn because of systemic side effects.

Visual acuity in 1992 decreased to 20/200 right eye and 20/80 left eye and the eye was clinically quiet. While continuing systemic steroids, we started treatment with hyperbaric oxygen therapy in February 1994 (see Fig 1), five times a week over 5 weeks. One hyperbaric session involved 100% oxygen (8 litres/min) administered by a nose/mouth mask subsequently pressuring the muzzle chamber (98 m³) with compressed air from 1 atmosphere to 3 atmospheres in 12 minutes, followed by a period of 75 minutes at 3 atmospheres and finally decompression at 1 atmosphere. Visual acuity gradually improved to 20/100 right eye and 20/40 left eye within 2 months. The visual evoked potential by pattern onset stimuli showed that the minimal check size minimally evolving a response decreased in the right eye just after the onset of treatment and stabilised around 6 minutes, and in the left eye it decreased from 6 minutes to 3 minutes, therefore showing the same effect as the Snellen visual acuity. Visual acuity stabilised around 20/100 right eye and 20/64 left eye for 7 months and then decreased again (see Fig 1). Fluorescein angiography did not reveal any significant changes in cystoid macular oedema as documented before, during, or after therapy.

Ten months after the first treatment we decided to repeat it, which resulted again in a considerable improvement of visual acuity to more than 20/64 right eye and 20/40 left eye (Fig 1). This time no change in the pattern of the visual evoked potential could be documented. Seven months after this repeated treatment the visual acuity had gradually decreased to 20/200 right eye and 20/64 left eye. Again, fluorescein angiography showed no changes of macular oedema.

COMMENT
Hyperbaric oxygen has many effects on ocular functions: it is known to influence ocular oxygenation and blood flow in several experimental studies. Human visual function has been influenced by this treatment—for example, with contrast sensitivity, visual field, and dark adaptation. It is also used therapeutically in patients with macromitochondrial ocular ischaemia.5

Several reports have shown the favourable influence of hyperbaric oxygen treatment in cystoid macular oedema of various causes but none of these reports describe results over a period longer than 3 months.6–9 We demonstrated that this treatment had a positive and reproducible effect on the visual acuity of a patient with long standing cystoid macular oedema caused by uveitis. This effect lasted up to 7 months and post-treatment visual acuity of the better left eye never reached values as low as the 2 years before oxygen treatment. The visual improvement in our patient was asymmetrical, probably because of coexisting ischaemia.

This case illustrates that hyperbaric oxygen can be a valuable adjutant in patients with sight threatening macular oedema.

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1 Rothova A, Suttrop-Schulten MSA, Tieferts WF, Kijlstra A. Causes and frequency of blindness in


Sarcoidosis presenting as a cutaneous eyelid mass

EDITOR,—Sarcoidosis is a multisystem granulomatous disorder of unknown aetiology, most commonly affecting young adults and presenting most frequently with bilateral lymphadenopathy, with or without pulmonary infiltration, and with skin or eye lesions. Cutaneous involvement is present in 23% of patients with chronic sarcoidosis and 11% of patients without ocular sarcoidosis.1 We report a patient with unilateral palpebral sarcoid but without any other evidence of ocular or cutaneous sarcoidosis.

CASE REPORT
A 65-year-old woman presented with a large, firm, non-tender cutaneous mass involving the upper lid and then extended to the lower lid. She denied any systemic symptoms and physical examination was unremarkable. Ophthalmic examination showed a best corrected visual acuity of 6/6 in each eye. A discrete, large, prominent cutaneous mass without erythema was present in the lateral quarter of the left upper lid and the skin was asymmetrical, probably because of coexisting ischaemia. This case illustrates that hyperbaric oxygen can be a valuable adjuvant in patients with sight threatening macular oedema.

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Figure 1 Change in best corrected visual acuity, as log minimal angle of resolution, as influenced by treatment with hyperbaric oxygen. Open circles indicate right eye and closed circles indicate left eye; arrow 1 indicates first treatment and arrow 2 indicates second treatment.

Figure 1 Cutaneous mass involving the lateral canthus, the upper and lower lid.