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

Suttorp-Schulten, M.S.A.; Riemslag, F.C.C.; Rothova, A.; van der Kley, A.J.

Publication date
1997

Published in
British journal of ophthalmology

Citation for published version (APA):
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M S A SUTTORP-SCHULTEN, F C C RIEMSLAG, A ROTHOVA, A J VAN DER KLEY and F C C RIEMSLAG

Br. J. Ophthalmol. 1997;81;329-

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LETTERS TO THE EDITOR

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EDITORS,—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.

Treatment of cystoid macular oedema has been reported with good results by hyperbaric oxygen, but only limited follow up was presented.2

CASE REPORT

In 1986 a 46-year-old woman developed bilateral posterior uveitis with vitreitis and a periphery 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 photocoagulation 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 Cyclosporine was added to therapy with no positive results; later it had to be withdrawn because of systemic side effects.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 subsequentlypressuring the multiplace chamber (98 m) 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 angio-...