Mobility spectacles for ankylosing spondylitis

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Visual disability in cervical ankylosis may be corrected with customised prismatic spectacles as an alternative to spinal osteotomy

Patient with ankylosing spondylitis wearing prisms for optical correction

Restricted vision may be a problem for patients with severe spinal deformity. Improved navigational vision is often achieved with a spinal operation. As an alternative to this we developed prismatic spectacles for a patient with ankylosing spondylitis.

Case report

A 37 year old man was referred because of impaired distance vision. He had had disabling ankylosing spondylitis for 14 years and had been treated with spinal radiotherapy, extensive spinal physiotherapy, and intramuscular corticosteroid injections. Chronic gastrointestinal haemorrhage and anaemia had necessitated blood transfusions. He had undergone a spinal extension osteotomy at L3-4 in 1980 and developed postoperative respiratory failure requiring intensive care. Over the next four years his spinal flexion deformity recurred, but in view of costovertebral ankylosis, pulmonary apical fibrosis, and chronic respiratory failure he was not considered fit for a further orthopaedic corrective operation.

A flexion contracture of the spine with loss of all neck movements resulted in a head down position from which he could not see beyond 1.5 m with maximum upgaze. Despite a visual acuity without refractive error of 6/5 (Snellen chart) in both eyes he could not walk alone outdoors because of restricted vision due to this head posture.

After a careful trial with hand held prisms the medical physics department incorporated two 45 D base up plastic prisms into a normal spectacle frame with securing straps to the side of the frame (figure). The prisms were cemented to a flat piece of clear plastic along the upper rim of the frames. All surfaces were highly polished. These spectacles were tested in a supervised mobility trial, which was successful, before they were issued.

The patient achieved a horizontal line of sight with upgaze and could see 6 m ahead with comfort when his eyes were in the primary position of gaze. He was able to resume walking outdoors unaided.

Discussion

Visual problems in ankylosing spondylitis are mostly due to anterior uveitis. Spinal deformities may restrict distance vision in advanced disease. Only four case reports that we are aware of describe special spectacles for such patients.¹⁻⁴ Mirrored prisms in reversed recumbent spectacles, described by one of us previously, provided too much upward deviation of light for this patient.³ Two 30 D, base down Fresnel's prisms were used successfully in another case report.⁴ Although some patients may be intolerant of such spectacles because of the weight, power, and attendant chromatic aberrations of the prisms, patients with visual handicap due to spinal deformity should be offered a trial of prisms. This can be done simply with a pair of hand held prisms. Hospital based optometrists or ophthalmologists who liaise with the hospital's medical physics units may be able to supply modified optical aids on a trial and error basis.

The definitive treatment of spinal deformity is spinal

osteotomy, which has perioperative problems that include peripheral neurological complications, acute gastric dilatation, instability of the spine, continuation of deformity, and the increased morbidity of general anaesthesia seen in patients who have restrictive lung disease as a feature of ankylosing spondylitis.⁵

Clearly, this simple, inexpensive aid is a useful option for patients with ankylosing spondylitis, and we recommend it to general practitioners, orthopaedic surgeons, rheumatologists, and others who are likely to encounter these problems in clinical practice.

We thank Mr D McKenzie of the medical physics department for constructing the prismatic spectacles and Mr S Eisenstein of the Robert Jones and Agnes Hunt Orthopaedic Hospital, Oswestry, Shropshire, for advice and for details of our patient's orthopaedic treatments.

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- 3 Storey JK. An optical aid for a case of severe ankylosing spondylitis. *The Ophthalmic Optician* 1973;13:1324.
- 4 Richer SP, Hall T. Mobility spectacles for a patient with ankylosing spondylitis. *Am J Optom Physiol Opt* 1986;63:927-30.
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ANY QUESTIONS

What precautions should a traveller in rural areas of developing countries take against viral hepatitis infections?

The main risk is from hepatitis A and that form of non-A non-B hepatitis that is spread by the faecal-oral route. Both infections are transmitted by food and water contaminated by faeces. All water should be boiled for five minutes or passed through a filter known to inactivate viruses such as the Travel Well.* Salads should be avoided unless they can be sterilised in hypochlorite solution such as Milton. A high level of protection against hepatitis A can be given by an injection of normal human gammaglobulin, and, according to dose, protection can last up to four months. Fruit that cannot be peeled is best avoided, and all other food should be carefully cooked. Only boiled milk should be drunk.

Hepatitis B and the parenterally transmitted variety of non-A non-B hepatitis are contracted by contact with blood, so the two main risks are from blood transfusion and use of improperly sterilised syringes or needles. The only way to avoid the first risk is to be vaccinated against hepatitis B, but this will not, of course, protect against non-A non-B hepatitis. The only way to avoid the second risk is to take a small kit containing syringes and needles, although this may cause difficulties at immigration. —DION R BELL, reader in tropical medicine, Liverpool

*Details from Pre-Mac (Kent) Ltd, Unit 1, 103 Goods Station Road, Tunbridge Wells, Kent TN11 2DP (tel 0892 34361).

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