patients had any evidence of neurological disorders before head injury.

Serum CK-BB concentrations apparently increase rapidly after serious head injury and may reach 30 to 40 times the mean control value (fig 1). Of patients for whom serial measurements were available at least three in the fatally injured group continued to have concentrations five to 10 times normal three to six days after injury. In less serious cases CK-BB concentrations approached normal within two or three days. Hence such preliminary serial CK-BB measurements appear to correlate with clinical improvement, and a high initial reading suggests severe cerebral injury. Possibly concentrations of diagnostic and prognostic value would be obtained if patients with serious head injury were assayed for serum CK-BB within six hours of injury and again after four to six days. The use of CK-BB concentrations as an indicator of continuing or increasing cerebral oedema would require daily samples, but as little as 200 μ l of serum (or plasma derived from daily blood gas measurement) would suffice.

Serum CK-BB detected by radioimmunoassay is apparently a sensitive biochemical indicator of brain injury. Not one of our patients with evidence of brain laceration, bruising, or swelling failed to show a concentration above normal. CK-BB is a soluble cytoplasmic protein which presumably can diffuse readily into the blood stream and is consequently detectable even in patients with concussion or minor head injury. Further measurements of this protein as a potentially clinically useful adjunct in the management and follow-up of head injury appear to be justified, and such a study is in progress.

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SHORT REPORTS

Fibreoptic bronchoscopy: is sedation necessary?

Fibreoptic bronchoscopy is now carried out in chest units all over Britain. Opinions differ on the premedication required and the need for general anaesthesia. This study attempts to assess patients' reactions to bronchoscopy without sedation or, in a few cases, with very mild sedation.

Patients, methods, and results

The study comprised 100 consecutive routine diagnostic bronchoscopies. All patients were premedicated with atropine 0.6 mg and two benzocaine lozenges. Seven patients were given diazepam 10 mg intramuscularly because they appeared very nervous or requested it. All were fully conscious and capable of seating themselves in the dental chair used for the procedure. The nose was sprayed with cocaine 5% and the pharynx with lignocaine 4%. The instrument was passed transnasally. Lignocaine 2 ml was instilled over the vocal cords and a further 2 ml into the trachea, which was then entered. After inspection of the bronchi tissue for histological examination was taken in 60 cases before withdrawing the instrument. Patients were asked to complete a small questionnaire (table) and were then allowed to return home or to the ward.

Out of the 100 patients 95 found the procedure "no bother" or "a bit uncomfortable," a response which was even more favourable than expected. Four recorded worse impressions of the procedure and may be said to have found it unacceptable. In one patient copious vomiting over the operator caused the procedure to be abandoned. Ninety-two patients stated their

willingness to have a repeat examination done in the same way if advised. Six asked for a general anaesthetic, and one rejected any possibility of a second bronchoscopy. This question was asked to try to establish whether patients were merely trying to please in their comments. The replies suggested that they were mostly being honest. There were no serious

Questionnaire given to patients after fibreoptic bronchoscopy

You have just had an examination which we call bronchoscopy. We would like to know how you found it. Please mark with a cross the comment which comes nearest to your feelings about it.

Did you find the examination:

- ☐ No bother?
- ☐ A bit uncomfortable?
- ☐ Bad?
- ☐ Very bad?
- ☐ The worst experience you have ever had?

If you had to have the examination again would you want it done:

- ☐ The same way?
- ☐ Only under a general anaesthetic?
- ☐ Not at all?

complications. Three patients had haemoptysis and two slight epistaxis. Three patients vomited, including the one in whom the procedure was abandoned. There were 39 visible tumours. In 29 out of the 38 of these that were examined the histological opinion was definitive. Failure to make a positive diagnosis was associated with necrotic tumour tissue, previous radiotherapy, or a difficult biopsy. Where the appearance was of extrinsic compression a positive diagnosis was possible in only two out of 11 cases. In 11 cases examination showed non-malignant disease.

Comment

This small study is the first that has attempted to assess the need for sedation in fiberoptic bronchoscopy and the reactions of patients when sedation is not used. The results show that without sedation fiberoptic bronchoscopy remains quite acceptable to the patient. The incidence of complications after fiberoptic bronchoscopy is low^{1 2} and is often related to general anaesthesia or sedation. When these are not given the procedure becomes yet safer and the need for admitting the patient to a bed, even as a day case, is usually avoided. The diagnostic yield in this series is comparable with that obtained in other series^{2 3} but could be improved with the addition of brush cytology.

I thank Drs G S Graham and K B Robinson for histological interpretation, Mrs S Anderson and Mrs T Curtis for assisting, Dr D A Ellis for performing some of the bronchoscopies, and Miss A Willis for secretarial help.

¹ Credle WF, Smiddy JS, Elliott RC. Complications of fiberoptic bronchoscopy. *Am Rev Respir Dis* 1974;109:67-72.

² MacDonald JB. Fiberoptic bronchoscopy today: a review of 255 cases. *Br Med J* 1975;iii:753-5.

³ Webb J, Clarke SW. A comparison of biopsy results using rigid and fiberoptic bronchoscopes. *Br J Dis Chest* 1980;74:81-3.

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Use of glasses by adolescents with good vision

There is good evidence that many adolescents who are given glasses after sight testing do not wear them. In a national survey of vision screening of adolescents¹ as many as 33% of the children did not bring their glasses for the test. Nearly half of these children could see well without glasses. The inference drawn was that the children thought they got no benefit from wearing their glasses. So are National Health Service resources being wasted?

Methods and results

To throw light on why children do not wear their glasses, we asked all 14- and 15-year-olds in one London borough who had been prescribed glasses and had a distance acuity of 6/9 or better to bring their glasses for analysis of the prescription. As in the national survey,¹ some came for examination without their glasses. We asked them how often they wore their glasses. Out of 65 who answered, 20 wore them as prescribed, but 17 wore them occasionally and 28 never wore them. We analysed the prescription of 80 pairs of glasses and found that 18 out of 25 children who seldom or never wore their glasses had been given minimal prescriptions regardless of whether they had astigmatism. Out of 25 regular users, only eight had minimal prescriptions, and regular users were more likely to have an unaided vision of 6/9 than 6/6. Nine children had a defect of near vision in one eye, and seven wore their glasses, though all nine had more than minimal prescriptions.

Discussion

The rejection of glasses by older children who see normally without them is sensible. Most of the children we examined had glasses of low power. As would be expected, those who wore their glasses were more likely to have a measurable, though slight, visual defect for distance or in some cases in near vision. It was difficult to

understand why glasses with one plain lens and the other the weakest lens in the box were ever prescribed. One child with completely normal vision for near and distance had been prescribed glasses (never worn) nearly identical to those prescribed for dyslexia. Another had had three changes in prescription in two years. The national survey¹ showed that low-power lenses were ordered less frequently in the north of England than elsewhere in Britain. So the criteria for issuing prescriptions varies and needs to be defined.

Most of the eye tests had been given because of complaints of eyestrain or headache, more often in girls than boys, and symptoms either resolved spontaneously or resolved after a short period of wear, which shows the power of placebo. Four children actually complained that their vision was worse with their glasses, and this was confirmed in one eye in each case (the better eye).

Now that the form GOS1 has been abolished, doctors have little influence over how visual problems are handled. But our results show that when doctors order an eye test for adolescents whose eyesight is good parents should be told that the test is only to exclude disease. We are not suggesting that community and school doctors should abandon screening or referral, because there is a chance of a pathological cause of eyestrain or headache. But we think they should be lenient toward older children who claim that their glasses are useless, and especially toward those whose distance vision is 6/6 even in one eye. Nevertheless, we do not make these recommendations for younger children.

We thank Dr Rosemary Graham, area specialist in community medicine (child health), Merton, Sutton and Wandsworth Area Health Authority, and all the medical and nursing officers who helped; and the heads of the schools who welcomed us and their pupils who co-operated cheerfully.

¹ Peckham CS, Gardiner PA, Tibbenham A. Vision screening of adolescents and their use of glasses. *Br Med J* 1979;i:1111-3.

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Prevention of infection after abortion with a supervised single dose of oral doxycycline

Although most induced abortions have no serious delayed or immediate consequences, pelvic infection follows in about 1.5% of cases¹ and may permanently impair fertility. Since many women who have abortions intend to have children later, the prevention of infection is particularly desirable. Prophylactic antibiotics are increasingly used in many surgical procedures but are not routine or even usual after abortion, although there is one report² of a non-significant but not unimpressive reduction of infection. Most patients who have had an abortion are discharged within a few hours of operation, and compliance with a course of oral antibiotics (as currently used at British Pregnancy Advisory Service clinics) is likely to be poor, while most conventional single-dose prophylactic antibiotics are too short acting or have too narrow a range of activity to eradicate organisms such as gonococci and chlamydia that may cause infection after abortion.

Doxycycline (Vibramycin) is a long-acting tetracycline, and a single oral dose of 500 mg usually gives effective blood concentrations for at least four days.³ It has the low toxicity of tetracyclines, but absorption is unimpaired by food and it is effective against gonococci and chlamydia. I present the results of a controlled trial, in nearly 3000 patients, of doxycycline in the prevention of infection after abortion.

Patients, methods, and results

Because patients having an abortion are understandably difficult to follow up (especially patients of the British Pregnancy Advisory Service, who come