LETTERS TO THE EDITOR

Neural tube defects and zinc

EDITOR,—I read the article by Bound *et al* on the involvement of deprivation and environmental lead in neural tube defects (NTDs) in the journal with great interest.¹

The authors suggested that lead is a possible cause of NTDs, especially anencephaly, either by direct action on rapidly developing nervous tissue or could act indirectly by causing zinc deficiency with secondary folate deficiency. Lead reduces the bioavailability of zinc from food and the folate uptake is reduced by secondary zinc deficiency. They pointed out that further investigation is needed to study the role of zinc deficiency in the aetiology of NTDs.¹

Severe first pointed out, from epidemiological evidence, a possible relationship between zinc deficiency and central nervous system malformation.² In fact, the essential role of zinc in embryonic development and a relationship between maternal zinc deficiency and NTDs have been the subject of several studies.³⁻⁵

Furthermore, in a genetic zinc deficiency disorder, acrodermatitis enteropathica, there is severe intestinal mucosal atrophy that can be reversed by effective oral zinc supplementation. In seven pregnancies in patients with acrodermatitis enteropathica, there was one spontaneous abortion and two major congenital malformations.⁶ Conversely, pregnancy outcome was good when a patient with acrodermatitis enteropathica was given supplemental zinc throughout her pregnancy.⁷

A case of a nutritionally zinc deficient young Turkish woman was reported who had previously delivered two anencephalic still-born infants. After zinc supplementation she delivered a normal full term child.⁸

Our recent report concerning maternal plasma zinc concentrations after an oral zinc tolerance test in pregnancies associated with NTDs in Turkey showed that some of the affected women had defective zinc absorption due to chronic zinc deficiency, which returned to normal after zinc supplementation.⁹ Four affected women gave birth to normal infants; only one infant had closed spina bifida.¹⁰

Previous data and findings in human studies are evidence for the possible role of zinc metabolism at least in some of the mothers of babies with NTDs.

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Dr Bound comments:

I would like to thank Dr Akar for his interesting letter. We knew of some of the references associating NTDs with zinc deficiency, but were not aware if recent work had shown it to act directly or by causing folate deficiency.

Our statement that further investigation was needed referred primarily to the need to assess by reliable methods the zinc and folate status of mothers of future cases.

- 1 Bound JP, Harvey PW, Francis BJ, *et al*. Involvement of deprivation and environmental lead in neural tube defects: a matched case-control study. *Arch Dis Child* 1997;76:107-12.
- 2 Severe LE. Zinc and human development: a review. *Human Ecology* 1975;3:43-7.
- 3 Cavdar AO, Arcasoy A, Baycu T, *et al*. Zinc deficiency and anencephaly in Turkey. *Teratology* 1980;22:141.
- 4 Cavdar AO, Bahçeci M, Akar N, *et al*. Zinc status in pregnancy and the occurrence of anencephaly in Turkey. *Journal of Trace Elements and Electrolytes in Health and Disease* 1988;2:9-14.
- 5 Dinçer N, Akar N. Maternal hair zinc, copper and magnesium concentration in neural tube defects in Turkey. *Trace Elements and Electrolytes* 1995;12:184-5.
- 6 Hambidge KM, Neldner KW, Walravens PA. Zinc, acrodermatitis enteropathica and congenital malformations. *Lancet* 1975;i:577-8.
- 7 Breton DP, Jackson W, Young A. Two pregnancies in a patient with acrodermatitis enteropathica treated with zinc sulphate. *Lancet* 1981;ii:500-2.
- 8 Cavdar AO, Bahçeci M, Akar N, *et al*. Effect of zinc supplementation in a Turkish woman with two previous anencephalic infants. *Gynecol Obstet Invest* 1991;32:123-5.
- 9 Akar N, Bahçeci M, Uçkan D, *et al*. Maternal plasma zinc levels after oral zinc tolerance test in pregnancies associated with neural tube defects in Turkey. *Journal of Trace Elements in Experimental Medicine* 1991;4:225-7.
- 10 Akar N. Pregnancy outcome of mothers with defective oral zinc tolerance test. *Journal of Trace Elements in Experimental Medicine* 1997;10:153-4.

Integrated management of childhood infections and malnutrition

EDITOR,—The article by Campbell and Gove was timely and excellent.¹ I am working in Bolivia to implement the programme developed by the World Health Organisation (WHO), "Integrated Management of Childhood Illness" (IMCI), as a means to decrease the high morbimortality in children less than 5 years old due to the most common illnesses in each region by appropriate and integrated management.²

The programme has been adapted to the needs of Bolivia and we have already run a workshop, with the participation of paediatricians from all over the country. The Bolivian Health Department is very enthusiastic to start the IMCI programme as soon as possible and is one of the first Latin American countries adopting it.³

The main paediatric health problems in Bolivia are respiratory infections, diarrhoeal diseases, tuberculosis, malnutrition, anaemia, malaria, and infections in the newborn period.

Right now the Health Department, the Paediatric Society, WHO/Pan American Health Organisation, Unicef, US Agency for International Development, and the Bolivian medical schools are working together to make possible a full scale application of the programme. We have just held a workshop with the participation of the three Bolivian medical schools to analyse the possibility of incorporating the IMCI programme in the regular training of medical students. This way we could reduce the cost of training graduate physicians and provide doctors coming out of medical school with a good knowledge of the evaluation and treatment of patients.

I attended a consultative meeting held in 1996 by the WHO in Geneva, with other experts from around the world, where the

feasibility of applying this programme in medical schools in underdeveloped countries was discussed, and we all agreed with the importance of incorporating the programme at different levels of the medical school curricula.

It is important to emphasise the input of developed countries to ensure a scientific basis behind these programmes and, as Campbell and Gove said, to be aware of the problems faced by physicians working in underdeveloped countries. Also, when training foreign students, both teachers and students should learn about the integrated management of childhood illnesses, something that many standard textbooks do not mention.

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Addendum: as of January 1998, the IMCI programme is being implemented in our medical schools.

- 1 Campbell H, Gove S. Integrated management of childhood infections and malnutrition: a global initiative. *Arch Dis Child* 1996;75:468-70.
- 2 Benguigui Y. Atencion de las enfermedades prevalentes en el contexto de la salud integral del niño. *Revista de la Sociedad Boliviana de Pediatria* 1996;35:48-52.
- 3 Mazzi E. AIEPI. *Revista de la Sociedad Boliviana de Pediatria* 1996;35:834.

Head lice in schoolchildren

EDITOR,—In his recent letter, Charlton raises concern that head lice can be transmitted on combs and drapes.¹ We agree this is so in certain circumstances: healthy lice, forcibly removed from the head will re-establish if they are allowed back on a head within one or two days of removal. Lice can be caught on a comb at one stroke and returned to the head at another. Most head lice are undamaged by combing. Combing dry hair can propel lice by electrostatic charge through the air. If they land unnoticed on a person's clothing or skin they will climb up to the head.

Thoroughly wet lice, however, appear dead and remain motionless until they dry off, which takes some time especially if they are bathed in ordinary hair conditioner; this provides ample time to remove them from a comb and dispose of them before they reactivate. The "bug busting" method mentioned in our review is entirely performed in wet hair and the carer is instructed to examine the comb for lice and remove them between each stroke.² This can usually be done by wiping on kitchen paper or rinsing; if any lice lodge between the teeth, a cocktail stick or nail-brush will ease them out. A white plastic cape is provided in the Bug Buster Kit to protect the patient and because any lice landing there can be easily wiped off. We agree that the education of hairdressers in these facts is important.

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- 1 Charlton R. Head lice in schoolchildren [letter]. *Arch Dis Child* 1997;77:277.
- 2 Ibarra J, Hall DMB. Head lice in schoolchildren. *Arch Dis Child* 1996;75:471-3.

Correction

Development of a paediatric coma scale in intensive care clinical practice

Unfortunately an authors' error occurred in the above paper by Tatman *et al* (*Arch Dis Child* 1997;77:519-21). In table 1 under the heading "Motor", M6 should read: "obeys commands . . . normal spontaneous movements" and M5 should read: "localises to pain stimulus . . . as older child or withdraws to touch".

BOOK REVIEWS

Physical Signs of Sexual Abuse in Children. 2nd Ed. Report of a working party of the Royal College of Physicians of London. (Pp 97; £16 paperback.) Royal College of Physicians, 1997. ISBN 1-86016-043-3.

In the six years since the publication of the first edition of this report it is unlikely that many paediatricians have become truly comfortable when faced with the request to provide a medical opinion as to whether a child has been sexually abused. However, much has been learnt which if not allowing us to feel comfortable should at least allow us to feel more confident in our attempts to meet the needs of this group of children.

An increasing literature concerned with normal and abnormal findings on examination as well as with examples of good models of practice is reflected in the increase by one third in the size of the report. The number of cited references increases from 38 to 60. It is no surprise that chapters with the greatest increase in material cover the subject areas of normal anatomy and variants in the appearance of female genitalia together with the size of the hymenal orifice. The inclusion of colour photos from colposcopy, rather than line drawings, gives the reader a far more accurate understanding of many points discussed in the text. Interestingly the working party falls short of positively encouraging the use of the colposcope despite the major advantages the technique offers in reducing the need for repeat examination, facilitating expert opinion and peer review and of course in education.

The controversy surrounding the significance of reflex anal dilatation appears to have settled. This edition of the report makes subtle but significant changes in its summary of signs in this respect, suggesting that an increased diameter of dilatation (15 mm rather than 10 mm) should be used as a threshold for suspicion and more importantly emphasising that the finding should be reproducible.

Another area in which the second edition of the report has grown is that of the diagnosis and management of sexually transmitted disease. There is a detailed and comprehen-

sive appendix with more references than the main text. It is likely however that practitioners seeing relatively few cases of sexual abuse outside of specialist centres might better develop arrangements for this complex aspect of assessment and management with their local specialist in genitourinary medicine.

As the working party recommends, an increasing proportion of work in the assessment and management of child sexual abuse is carried out by experienced and well trained individuals. Provision of specialist services remains variable so it continues to be important by providing a guide to the examination of children and interpretation of physical signs. It could have been improved by including recommendations guiding the reader towards comprehensive textbooks able to supply a broader overview of the other aspects of assessment and care that are so important when helping children who have been sexually abused.

MARK HUNTER

Consultant community paediatrician

Echocardiography in Pediatric Heart Disease. 2nd Ed. By Rebecca Snider, Gerald Serwer, and Samuel Ritter. (Pp 596; £125 hardback.) Mosby, 1997. ISBN 0-8151-7851-4.

There is no doubt that two dimensional echo has revolutionised the practice of paediatric cardiology. It is a safe, painless, portable technique that can be performed by the bed/cot side. It has largely replaced diagnostic angiography. In North America there are now doctors who are solely paediatric echocardiographers (in the UK we tend to be "Jacks of all trades", I forget the rest of that aphorism). Three luminary American echocardiographers have produced this fine textbook.

It is the second edition, the first was published in 1990. Have things changed enough since then to justify a new edition?..... Colour flow Doppler has developed into an essential part of the examination and this alone could justify a major revision, or at least many new pictures and about 50 good quality colour plates are included. New branches of clinical echo work such as fetal and transoesophageal echocardiography, and those largely confined to research (at present) such as three dimensional and intravascular, are included, but these techniques are probably best served by their own texts. The authors have radically changed the chapter on quantitative methods. Interestingly, they state that the need for M mode has been virtually eliminated, which may cause a few waves of apoplexy in the UK, but is probably right.

The core of this book remains two dimensional imaging in congenital heart disease. I would have liked to see more line drawings of abnormalities as these can be very helpful for trainees. There are many excellent echo pictures in the text. A mentor once told me that a good textbook should have figures you wished to copy for lecture slides and this book passes that test easily. It is almost as comprehensive as an atlas, but not quite; there are enough gaps to make it a little frustrating for use as a dip-in text to help an experienced echocardiographer establish a rare diagnosis, for example a pulmonary sling.

There is a comprehensive reference section at the end of each chapter, as is the way of major texts, but I wonder if this is really nec-

essary given the easy access to computer searches which will inevitably be more up to date.

This text is unlikely to be of use to paediatricians. Whether paediatricians should be scanning hearts is much debated. I think they should, but would benefit from a basic course initially, and probably a video instruction (which is something we try to provide in our region), rather than a comprehensive text such as this.

This book is ideal for new registrars (and perhaps echo technicians) in paediatric cardiology, and I recommend it to them.

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A Clinical Guide to Inherited Metabolic Diseases. By Joel T R Clarke. (Pp 280; £16.95 paperback, £50 hardback.) Cambridge University Press, 1996. ISBN 0-521-48524-X (paperback), 0-521-48064-7 (hardback).

All paediatricians need to know about inherited metabolic diseases. For most of these conditions, diagnosis depends on the astuteness of clinicians. Though newborn screening may be extended to other metabolic disorders in the future, current programmes in most parts of the UK only detect phenylketonuria and congenital hypothyroidism. Metabolic diseases can present in a wide variety of ways, involving any system of the body. No subspecialist can completely ignore these conditions but neonatologists and general paediatricians need particularly wide knowledge. Dr Clarke's book is an excellent introduction for paediatricians in training and will also be valuable to established consultants, as there has been dramatic recent progress in this field.

Conventional textbooks have been structured around the description of individual inborn errors. Given the number of potential defects and the range of features found in each one, this approach is of limited value to clinicians seeking a diagnosis. Dr Clarke's "clinical guide" is based on clinical presentations, suggests appropriate investigations, and describes the commoner metabolic diseases associated with each. It is designed for the general paediatrician and is not intended to be exhaustive. Neurological, hepatic, cardiac, dysmorphic, and acute neonatal presentations are considered, along with acidosis and positive screening tests for phenylketonuria. Renal presentations (apart from renal tubular acidosis) are omitted, as are many rarer manifestations. More comprehensive diagnostic algorithms have been published by Professor Saudubray in *The Metabolic and Molecular Bases of Inherited Disease* (7th Ed. Edited by C R Scriver *et al*; New York: McGraw-Hill, 1995) but these lists, though valuable to the specialist, would be indigestible for most trainees.

Inevitably, a textbook based on clinical presentations does not give such a clear picture of each disorder as more conventional texts—but there are several of these available to complement Dr Clarke's book. In its 280 pages, the "clinical guide" contains 63 useful tables. Some of these contain information that can be surprisingly hard to find elsewhere, such as the lists of pathological and spurious causes of organic aciduria. More flow charts might be helpful (there are only

five) but they are difficult to devise, generally requiring some simplification of the clinical heterogeneity associated with each inborn error.

The principles underlying treatment are outlined in the final chapter. Details are not given as, once the diagnosis is established, patients will generally be referred to a specialist. Nevertheless, a little more advice might have been appropriate. Non-specialists remain important members of the team, especially for patients with disorders of intermediary metabolism, who require urgent admission to a local hospital during episodes of acute metabolic decompensation. Protocols for the management of such emergencies need to be devised for each patient, including an "emergency regimen" to minimise catabolism that can be started at home. It is particularly important to appreciate that subtle signs recognised by parents, such as a glazed look, can be more sensitive indicators of illness than biochemical tests.

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Paediatric MCQ Revision for MRCP and MRCPCH. By Jane Lucas and James Nicholson. (Pp 192; £13.99 paperback.) Butterworth Heinemann, 1997. ISBN 0-7506-3014-0. (Obtainable from: Customer Services Department, Heinemann Publishers Oxford, PO Box 382, Halley Court, Jordan Hill, Oxford OX2 8RU.)

Success in all examinations is, to an extent, dependent upon technique. This is undoubtedly true for part I MRCPaeds, and will presumably be true for the new part I MRCPCH. Knowledge is obviously essential, but so is good multiple choice technique. Any book that provides both an opportunity to gain knowledge and to practise multiple choice technique is therefore a valuable addition to a prospective candidate's bookshelves.

Paediatric MCQ Revision for MRCP and MRCPCH consists of five practice examinations, each with 60 questions, followed by answers with explanatory notes. The format is the same as for the part I, thus allowing practice under exam conditions, and the question topics occur randomly, as in the exam. However, the main advantage of this book over its competitors is that there is both a general topic index (for example neurology) and a specific subject index (for example cerebral palsy), both of which give question number references. These indexes allow rapid identification of relevant questions when revising by topic or subject.

The standard of the questions is comparable with that of the Royal College practice papers, other MCQ books aimed at part I candidates and recent part I exams. The explanations are clear, concise, and easily understood. They present the information required to answer the questions in short and readily understood and retained paragraphs.

There are many multiple choice books currently on the market written for the part I MRCPaeds candidate and there is generally little to choose between them. However, the clear layout and quality of the explanations would make this book a valuable revision aid for the prospective part I candidate.

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Paediatric MCQs for Postgraduate Examinations: Volume 1—System Review. By Vaskar Saha, Simon Attard-Montalto, and Osborn B Eden. (Pp 226; £14.99 paperback.) Butterworth Heinemann, 1996. ISBN 0-7506-2769-7.

Paediatric MCQs for Postgraduate Examinations: Volume 2—Practice Examinations. By Simon Attard-Montalto, Vaskar Saha, and Osborn B Eden. (Pp 170, £14.99 paperback.) Butterworth Heinemann, 1996. ISBN 0-7506-2845-6.

The paediatric MRCP part I examination has created a new market for the burgeoning industry which has developed around medical postgraduate examinations. These two volumes are the latest offerings to the multiple choice question (MCQ) hungry candidate. Volume 1 is a comprehensive review of systems while volume 2 provides six complete examinations for further practice. The authors have wisely refrained from adding to the myriad of often conflicting MCQ tips available to the bewildered candidate and state their brief as the provision of practice material. The advice proffered on examination technique is standard and uncontroversial.

It is a remarkable feat to have conjured up quite so many obscure questions. However the answers are often short, with little or no explanation, and there is rather too much emphasis on eponyms and obscurities. One may question

A. whether an earnest politician's urine truly smells fishy (vol 1, p35)

B. the odour of a non-earnest (insincere?) politician's urine

C. the wisdom of inserting jokes into an MCQ book and

D. which of the above is true.

Otherwise the questions are generally well organised and unambiguous, and comparable with those in the specimen paper available from the Royal College of Physicians.

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WESTMINSTER BRIEFING

The following items are from *Children & Parliament*, autumn 1997. *Children & Parliament* is an abstracting service based on *Hansard* and produced by the National Children's Bureau. It covers all parliamentary business affecting children and is available on subscription via the internet. The *Children & Parliament* web site provides direct links to full text *Hansard*, government department sites, the sites of the Office for National Statistics, Ofsted, and other relevant organisations. For further details contact Lisa Payne, Editor, *Children & Parliament*, National Children's Bureau, 8 Wakley Street, London EC1V 7QE (tel: +44 (0) 171 843 6000; fax:

+44 (0) 278 9512). (The *Hansard* reference is given in parentheses.)

● The Medical Research Council annual spending on diabetes research is some £3 million and the Department of Health Policy Research Programme spent £272 000 on such research in 1996–97.

(14 Oct 97, Col 399.)

● The third part of the Disability Discrimination Act 1995 is to be implemented as soon as is practicable. A government task force is to study issues related to securing disability rights and the setting up of a disability rights commission.

(21 Oct 97, Col 605–608.)

● Extra money for schools announced in the budget will amount to £1 billion each year for education and a single sum of £1.3 billion for buildings and equipment to cover the current year and the next four years. The money will be spent on books, equipment, teacher training, measures related to discipline and truancy, class size reductions for 5 to 7 year olds, and building repairs.

(15 Oct 97, Col 440–444.)

● Questioned about the right of a general practitioner to refuse to take on a lesbian parent, the Minister of State for Health referred to 1992 General Medical Council guidance condemning discrimination on grounds of age, sex, sexuality, race, colour, beliefs, perceived economic worth, or the likely work load for doctors because of the patient's clinical condition.

(21 Oct 97, Col 202.)

● All local authorities are expected to draw up a plan for preschool education to be implemented from April 1998. Places for all 4 year olds will be available by September 1998. Early education is to be integrated with day care.

(16 Oct 97, Col 550–552.)

● The 1976 Adoption Act makes no special provision for adoption by lesbian/gay couples. A joint application may be made only by married couples. Unmarried couples may not apply jointly but one of the pair may do so as an individual.

(3 Nov 97, Col 74–75.)

● In 1996–97 government grants for asylum seekers with children amounted to £4.1 million; for adults without children it was £5.6 million, and for children without adults £3 million.

(13 Nov 97, 18 Nov 97, Col 652–653, 173–174.)

● The government commissioned a review of safeguards against the abuse of children in care. The resulting Utting report presents "a woeful tale of failure at all levels to provide a secure and decent childhood for some of the most vulnerable children". Over a third of children in residential care are not being educated. Young children, disabled children, and those with emotional and behavioural problems are most at risk of abuse. The report makes 20 main recommendations to safeguard children.

(19 Nov 97, Col 327–338, 585–596.)

● A bill due to have its second reading in February 1998 would require information about lead in pre-1960 paint to be provided

to people who buy paint stripping equipment and fluids. It would also provide for children under 3 living in older houses to be tested for potential lead poisoning.

(19 Nov 97, Col 343–345.)

- The Department for the Environment, Transport, and the Regions is funding research on the safety of children's journeys to and from school.

(14 Nov 97, 18 Nov 97, Col 696–697, 137–138.)

- A Health Education Authority campaign is aimed at encouraging women of child-bearing age to take more folate in order to reduce the risk of neural tube defects.

(26 Nov 97, Col 996–997.)

- In 1996–97 there were 1.7 million lone parents in Great Britain and in February 1997 some 1 020 000 lone parents were receiving income support.

(4 Dec 97, Col 328–329.)

- An April 1997 survey showed that 23% of children aged 0–13 in the back seat of a car were not wearing seat belts; in the front seat 6% were not. In 1988 the corresponding figures were 47% and 9%.

(10 Dec 97, Col 27–28, 29.)

- The government's new Social Exclusion Unit is part of the Economic and Domestic

Affairs Secretariat in the Cabinet Office and will, at first, concentrate on truancy and pupil exclusion, homelessness and rough sleepers, and sink housing estates. It is to be set up for two years in the first place.

(8 Dec 97, 9 Dec 97, Col 408–410, 20–22.)

- Some 21% of schoolchildren have special educational needs and 3% have statements of their needs.

(5 Dec 97, Col 580–637.)

- The government has promised £200 000 to the United Nations to help the UN special representative on children and armed conflict to start work.

(10 Dec 97, Col 1000.)