LETTERS TO THE EDITOR

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Palivizumab and RSV prevention

**EDITOR**—The letters from Drs Deshpande and Nicholl, in relation to the IMpact-RSV study and the UK guidance for the use of palivizumab in the prevention of serious RSV infections, raise interesting questions that need careful consideration.

I believe Dr Deshpande “has got it wrong” in that he fails to realise that the primary objective of the IMpact study was to investigate whether palivizumab reduced RSV hospitalisations in high risk infants. It was never intended that this study would address the severity of RSV infections, the need for paediatric intensive care, the need for mechanical ventilation, or a reduction in death rate. It is unreasonable to suggest that because the study didn’t show these then it is not valid. To show such benefits would require a totally different protocol, the numbers of patients being such that the study could never have been undertaken.

To reiterate the findings of the IMpact study, there was a 55% reduction in hospital admission rate for RSV proven disease—a significant result, however one wishes to rationalise it. Those high risk patients admitted with RSV infection spent fewer days in hospital, had less need for oxygen treatment, and had lower respiratory infection clinical scores if they received palivizumab.

The study was designed in association with and with the approval of the licensing authorities to grant a marketing licence for the medication. It was not designed to provide economic data on the cost effectiveness of the product. Both Deshpande and Nicholl fail to realise that if they want this information then different studies are needed.

Does anyone know the lifelong cost of RSV disease in infancy? What is the relationship between RSV hospitalisation in the first year of life, recurrent wheezing in childhood, or indeed the possible development of chronic obstructive pulmonary disease in later adult life? To develop a relevant, long term, cost effectiveness plan, all these points need to be taken into consideration. In an attempt to help with this there are two ongoing studies that Deshpande, Nicholl, and others, may find helpful. One is taking place in four centres in the UK and the other is a follow up study from the IMpact trial. Both are attempting to identify the most cost effective health service costs over a three year period following hospitalisation for RSV disease, and it is hoped the results will be available later on this year.

The UK guidance on the use of palivizumab does not advocate universal usage of the product, but makes recommendations on how infants may benefit. It is the role of clinicians in local hospitals to discuss with their managers, the local health authority, and the individual primary care group or trust, which specific patients they feel should receive palivizumab. These decisions may well differ between centres depending on budgets, the morbidity of their patients and interpretations of evidence both research and clinical.

RSV bronchiolitis remains the greatest annual epidemic disease to hit paediatric departments in Europe, the USA, and Australasia.¹ The treatment of the symptoms is unsatisfactory in that the only proven benefit is oxygen. Each year, vast amounts of money are wasted on wasted on bronchodilators, steroids, irapratropium bromide, and antibiotics. Palivizumab, the first monoclonal antibody to be developed specifically for use in paediatrics, has been shown to be effective in reducing hospital admission in high risk infants. To dismiss it out of hand seems churlish. To rationalise its use in which they in whom it may most benefit seems clinically sensible. All new treatments need to be considered with caution. However, I believe that if the outcome of a comparison of the two groups of 1839 and 7013 children had confirmed RSV hospitalisation, whilst two US groups of 1839 and 7013 children had RSV hospitalisation rates of 2.3% and 1.5% respectively. Despite the lack of comparator arms these data do suggest that the IMpact RSV trial may have underestimated the true efficacy of palivizumab.

The generation of pharmaco-economic arguments directly from the IMpact-RSV data very much oversimplifies what is an extremely complex issue. Hospitalisation rates vary considerably between risk groups, and measuring the true economic cost of RSV hospitalisation requires long term follow up, both of hospital, community, and parental costs. Despite its relatively high costs, modern neonatal care has led to dramatic improvements in the outlook of premature infants. Advances such as surfactant therapy and advances in mechanical ventilation seem expensive on the face of it, but both controlled trials¹¹ and clinical experience have shown the investment to be worthwhile.

Dr Deshpande refers to the guidance document reflecting the outcome of a consensus committee of a number of UK clinicians,¹² and issued by ourselves. Many were aware of the guidelines published by the American Academy of Pediatrics regarding RSV prophylaxis and the use of palivizumab,¹³ and felt that whilst they were very useful, UK guidelines should be formulated at a local level, taking into account local risk groups and epidemiology. For these reasons, the UK guidance document deliberately avoids being too prescriptive and whilst describing the two major risk groups (premature infants, ≤ 35 weeks gestation, and those with BPD), it emphasises that treatment priorities are likely to vary locally and that decisions regarding which preterm infants to treat will be individualised.

Abbott Laboratories are continuing to work with many in the paediatric community in order to help better define many of the issues. We strongly feel that palivizumab is an important breakthrough in the battle against RSV infection, a disease that continues to


¹¹ I am writing in reply to the recent correspondence regarding the use of palivizumab (Synagis),¹¹ a monoclonal antibody licensed for the prophylaxis of respiratory syncytial virus (RSV) infection in premature infants. RSV is a disease that affects 50% to 70% of all infants within the first year of life, and causes significant morbidity and mortality, particularly in a number of well defined high risk groups.

The major trial demonstrating the safety and efficacy of palivizumab (Synagis),¹¹ a randomised, double blind, placebo controlled, multicentre trial that enrolled 1502 children with prematurity (≤ 35 weeks gestation) or bronchopulmonary dysplasia (BPD). One hundred and twenty three of the children enrolled were from 11 UK centres. The primary end point of the IMpact-RSV study was hospitalisation due to confirmed RSV disease. The study was not powered to demonstrate a reduction in mortality, neither was it designed as a pharmaco-economic study. The average gestation of all the infants was 29 weeks and the placebo (n=500) and palivizumab (n=1002) groups were well matched for both demographic parameters and RSV risk factors. The study demonstrated a relative reduction in RSV related hospitalisation of 55% (10.6% placebo v 4.8% palivizumab p=0.0004). A significant reduction in RSV hospitalisation was seen irrespective of gestational age, diagnosis of BPD, and gender. Of all the children in both groups admitted with RSV infection, 27.7% were admitted to intensive treatment units (this figure was similar in both groups). There was however a significant reduction in the overall incidence of RSV related intensive treatment unit admission in the palivizumab group (3% placebo v 1.3% palivizumab p=0.026).

The placebo RSV hospitalisation rate of 10.6% reported in the IMpact-RSV trial was lower than that seen in previous controlled trials which have reported rates of 13.5%,¹³ 20%,¹³ 22.4%,¹³ and 37%.¹³ Further reported rates of hospitalisation vary depending on the risk group studied, and data from the US demonstrate that it is possible to predict subgroups who have considerably higher hospitalisation rates.¹³ Further data from both Europe¹⁰ and the US¹⁰ reported RSV readmission rates in large numbers of premature children receiving palivizumab prophylaxis over the 1998/9 RSV season (neither study had a placebo arm). Of the 16,563 European infants enrolled, 1.2% had confirmed RSV hospitalisation, whilst two US groups of 1839 and 7013 children had RSV hospitalisation rates of 2.3% and 1.5% respectively. Despite the lack of comparator arms these data do suggest that the IMpact RSV trial may have underestimated the true efficacy of palivizumab.

**THE EDITOR**

Academic Department of Child Health, City General Hospital, Newcastle Road, Stoke-on-Trent ST4 6QG, UK

cause high levels of morbidity and significant mortality in high risk infants.

CHRISTINA CARNEGIE
Medical Director, Abbott Laboratories Ltd, UK

13 Chandra RK. Five-year follow-up of high risk infants with family history of allergy who were exclusively breast-fed or fed partial whey hydrolysate, soy, and conventional cow’s milk formula. J Pediatr Gastroenterol Nutr 1997;24:380–8.

Dietary products used in infants for treatment and prevention of food allergy

EDITOR,—The joint statement of the European Society for Paediatric Allergology and Clinical Immunology (ESPACI) and the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPghan) [1], deserves some comment.

Firstly, on the use of soy based formulas for the treatment, as well as for the prevention of food allergy: I was disappointed that no word about this subject appeared in the conclusions of the statement. Many have claimed that the use of soy bean formulas in infancy is an efficient way of preventing food allergic disorders, but more recent prospective and randomised clinical studies have shown that soy protein is as allergenic as cow’s milk protein. As the matter remains controversial, I believe that the conclusion should have been that soy based formulas are not recommended for the treatment or prevention of food allergy until more data are available.

The second issue concerns the use of partially hydrolysed formulas for preventing food allergy. A recent five year follow up prospective, randomised, and controlled study by Chandra,[1] which showed a beneficial preventive effect of a partially hydrolysed formula in high risk infants, was ignored. The only study where the preventive effect of an extensively hydrolysed formula was compared with the effect of a partially hydrolysed formula, showed that the former was superior to the second.[2,3] This paper, however, has a possible methodological shortcoming: the manufacturer (Mead Johnson, Evansville, Indiana, USA) provided both a commercially available extensively hydrolysed formula (Nutramigen) and a non-commercially available (at least in Sweden where the study was undertaken) partially hydrolysed formula, prepared by mild (heat mild) enzymatic hydrolys. In future, such studies should only use commercially available formulas of either the same or different brands. I consider that current data are insufficient to allow a firm view. Therefore, I believe the conclusions should have stated that no clear recommendation can be made for the use of a partially hydrolysed formula to prevent food allergy.

Conclusions of consensus statements are generally considered as guidelines for the practitioner. Omissions, as in the case of soy based formulas, or ambiguities, as in the case of partially hydrolysed formulas, do not clarify the issues so should be avoided. I believe that modified conclusions, as referred to above, would have been more in agreement with the literature and more helpful to the reader.

The editor comments:

In her letter, Dr Carnegie refers to a guidance document reflecting the outcome of a consensus committee of a number of UK clinicians and issued by Abbott Laboratories Ltd.

Earlier this year, we received as a submission for publication such a document, headed by the names of a number of distinguished paediatricians and neonatologists. I was puzzled because it was addressed from a public relations company. I contacted all those named to the letter and the corresponding author was. I learned that they did not know the paper was to be submitted to a peer reviewed journal.

Consequently, I invited the PR company to withdraw the submission, which they did. The paper, itself, was marked as having been produced with the aid of an educational grant from Abbott Laboratories.

In general, the strictures of Disease in Childhood is reluctant to publish the results of consensus groups, unless the methods by which they arrived at their conclusions are totally transparent. This case illustrates one reason why we believe it is right to be cautious.

HARVEY MARCOVITCH
Editor in Chief

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1 Chandra RK. Five-year follow-up of high risk infants with family history of allergy who were exclusively breast-fed or fed partial whey hydrolysate, soy, and conventional cow’s milk formula. J Pediatr Gastroenterol Nutr 1997;24:380–8.

Health care needs for travellers

EDITOR,—The article recently published by van Cleemput has made a valuable contribution to the health care needs of travellers and has drawn attention to a very deprived section of our community. However, the assertion that childhood asthma is more common in travellers is not based on sound evidence. This suggestion was based on a study by Anderson, who reported on the health concerns and needs of traveller families. The selection criterion for Anderson’s study was families with children of less than 5 years of age. The traveller families had a mean of six children aged 1 to 15 years.
affluent families had a mean of 1.7 children aged 1 to 3 years, and the control inner city families had a mean of 1.9 children aged 1 to 4 years. Anderson reported that asthma was a concern to 30% of travellers compared with 11% of inner city families and 4.5% of affluent families, using a questionnaire that seemed to tackle parental concerns only, and was not validated for asthma incidence. Yet, van Cleemput extrapolated a high incidence of asthma in travellers’ children from this study, and did not comment on questionnaire validation or the confounding factors of age and transient early wheezing.

We used the ISAAC (International Study of Asthma and Allergies in Childhood) questionnaire to compare the prevalence of asthma in schoolboys, aged 6 to 12 years, from travellers’ families with settled controls. The parent reported prevalence of wheezing and related symptoms were all more common in schoolboys from the control group than in travellers' children from this study.
Our simple experiment has shown that fluids can be infused through an intraosseous cannula at a significantly higher rate to that of the intravenous devices. The resistance to flow in situ has not been calculated, but one could reasonably expect the capacitance of the marrow cavity to be greater than that of an infant's peripheral vein. These factors, in addition to the ease and success of placement of intraosseous over intravenous cannulae, lead us to advocate that greater emphasis is placed on the value of intraosseous cannulation during the early phase of resuscitation in infants.

This is an important issue that should be addressed both locally and nationally, as well as through advanced life support provider courses (APLS/PALS).

ROSS FISHER
Specialist Registrar, Paediatric Surgery

DYLAN PROSSER
Consultant Paediatric Anaesthetist, Royal Bristol Hospital for Sick Children, St Michael's Hill, Bristol BS2 8BJ, UK


Natural history of glutaric aciduria type 1

EDITOR,—In their retrospective study, Monavari and Naughten (Arch Dis Child 2000;82:67–70) suggest that early intensive management can alter the natural history of glutaric aciduria type 1. However, the pathogenesis of this disorder is poorly understood and just what is responsible for the better outcome is not clear. In several families in which the first child has the classical phenotype, we have noted a marked difference in outcome of siblings without any specific treatment.

Family 1—In this Jordanian family the first child had a severe movement disorder and died. The second has macrocephaly and mild gait disturbance but is attending normal school.

Family 2—This first child of Nigerian and West Indian parents has a severe dyskinetic cerebal palsy. Her sister has minimal symptoms and attends a normal school.

Table 1 Results and calculated infusion time for a bolus in a 5 kg baby

<table>
<thead>
<tr>
<th>Access device</th>
<th>Gauge</th>
<th>Flow rate (ml/min)</th>
<th>Infusion time for 100 ml bolus (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow venflon*</td>
<td>24</td>
<td>35.6</td>
<td>2.81</td>
</tr>
<tr>
<td>Blue venflon*</td>
<td>22</td>
<td>60.6</td>
<td>1.65</td>
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<td>Pink venflon*</td>
<td>20</td>
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<td>0.79</td>
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<tr>
<td>Green venflon*</td>
<td>18</td>
<td>161.2</td>
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<tr>
<td>Intraosseous needle</td>
<td>18</td>
<td>248</td>
<td>0.40</td>
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</table>

* BOC Ohmeda AB, SE-25106 Helsingborg, Sweden.

Gastrointestinal symptoms in asthmatic patients

EDITOR,—Caffarelli et al comment on several immunological mechanisms by which gastrointestinal symptoms could occur in asthma.1 They do not comment on whether they excluded cystic fibrosis (CF). This is relevant as there are an increasing number of mild phenotypes of CF presenting as asthma.2 CF could be a unifying diagnosis in the “asthmatic” with gastrointestinal symptoms.

The important clinical message is to consider a diagnosis of CF in difficult cases of asthma.

JOHN FURREN
Department of Paediatrics, Sunderland Royal Hospital, Keir Road, Sunderland SR4 7TF, UK


Drs Caffarelli and Atherton comment:

We appreciate the comments made by Dr Furren, and we would certainly concur with his view that one must consider a diagnosis of CF in any child presenting with the combination of asthma and gastrointestinal symptoms.

We accept that a diagnosis of CF may not always be obvious on clinical criteria alone, but it remains the case that there is no simple cheap screening test for CF, and we must therefore continue to test only those children in whom there is at least some clinical picture for suspecting this diagnosis. We believe that we did adequately consider CF in the children that participated in our study according to clinical criteria, but sweat testing was not undertaken routinely, nor did we screen for CF mutations. While it is possible that we may have missed a child in whom the combination of asthma and respiratory symptoms was due to CF, we consider it exceedingly improbable that such omission would have substantially prejudiced our results.

The finding that gastrointestinal symptoms, for most of which there was no simple explanation, are common both in children with atopic eczema and in children with asthma, suggests that these symptoms are a reflection of the patients’ atopic status itself, and undiagnosed CF is unlikely to be a significant contributory factor. Neither do we believe that these symptoms can merely be dismissed as being due to food allergy, any more than one could dismiss either atopic eczema or asthma themselves as being caused exclusively by food allergies. The precise aetiologies of these conditions remain to be clarified.

CARLO CAFFARELLI
DAVID J ATHERTON

BOOKS


The youth of today are not what they were: they are bigger. Rona and Chinn, in their long and meticulous study of the health and growth of some 87,000 children, have documented the continuing trend to increasing height for age in primary school children over a 20 year period. This is generally thought to be a good thing and indicative of ever improving health and nutrition. The trend has been rumoured to be at an end many times, but in fact continues. Similarly, poverty was thought to be at an end in the 1970s when this study had its beginnings, only to be reluctantly rediscovered after the Black report. The two clearly go hand in hand: when there is no more poverty and perfect health and nutrition have been achieved, there will be no further gain in height. The effect of poverty is illustrated in this study, as in many others, by the social class gradient in height. Yet the exact mechanism of the relationship is mysterious as most of the gradient disappears after adjustment for parental height. The authors argue that most of the variation must therefore be genetic, others argue that there has been overadjustment.

The other secular trend observed has been of increasing obesity: a worrying trend in light of the much larger epidemic in adult obesity. But then again all is not what it seems. Mean weight for height is referred to throughout as “obesity”. Yet, as this is the age when children pass through the thinnest phase of their growth, few if any will be actually obese and presumably a proportion were actually underweight. When does less undernutrition become too much overnutrition, and how do we tell? So a paradox: the secular trend to increasing height is good and is due to improved overall nutrition. The parallel trend

Evidence based care is upon us, whether we like it or not. There is a multitude of books on the subject, so how is this one different? This is the first in the “Harnessing health information series”, and summarises how evidence based care has evolved into mainstream NHS policy. It does appear to achieve what the series sets out to do, as it harnesses health information on the subject. The reader is gently guided around the different organisations set up to implement evidence based care, and the different policies in each of the countries of the United Kingdom are described. Many useful resources are highlighted, and the reader feels that he or she can make sense of all the jargon in current usage. There is a brief introduction to the practice of evidence based care, with an overview of the types of research, including qualitative research, and their advantages and disadvantages for answering different sorts of questions. The book does not set out to duplicate the many “How to...” books, but, rather, points the reader in the right direction. There is a useful chapter on information sources on the Internet, and a comprehensive chapter on guidelines, describing most of the arguments for and against. Again, the reader is continuously pointed in the direction of other useful information, without it being duplicated in this book. Patient information is covered in another chapter, and this is interesting and thought provoking. Reading, Audit, and where it fits into the system, is also included. Finally, clinical quality and clinical governance are brought into the picture, and it all makes sense.

Ruth Roberts is a nurse, and she emphasises the importance of multidisciplinary working. This is an easy book to digest, making common sense of what sometimes seems a complex system. It gives a “warts and all” description of evidence based care. The reader is not put off, but, rather, is left with the feeling, “I could do that.”

This will be a useful resource for managers, nurses, doctors, and clinical quality coordinators. It will be useful for senior staff with a good understanding of the health service and its current requirements, as well as being a good starting point for more junior staff who are trying to make sense of white paper recommendations, and the national organisations set up to implement those recommendations. It can be read in a couple of hours, and will not doubt become pre-interview reading for would be consultants and specialist registrars.

MAUD MEATES
North Middlesex Hospital

Essential paediatrics. Edited by Hull D, Johnston DL. (Pp 400, paperback; £24.95.) Churchill Livingston, 1999. ISBN 0 443 059 95 8

After coming to this country some years ago, I decided to take up paediatrics. I remember asking a senior colleague for advice regarding any textbook that comprised an introduction to the subject. She gave me a choice, but recommended that Essential paediatrics, then in its third edition, would make easy reading. I must say I found this sound advice. Of course, as a postgraduate, one had to progress rapidly on to other textbooks considered the bibles of paediatrics. Hence, when I was asked to review the fourth edition, I was overwhelmed as it brought back memories of my first few months in paediatrics.

As the editors have noted in their preface, this book is meant for medical students. I find that this has been maintained with regard to the manner in which different subjects have been handled with easy to understand language and diagrams. I continue to find the first chapter, “The ill child”, the most impressive and compelling to read, and would not hesitate to recommend this to postgraduate doctors intending to take up a first paediatric post. A similar chapter that needs special mention is that on emotions and behaviour, which, in a brief but concise manner, describes children that we meet daily. It teaches us the importance of careful history taking, including social and family histories.

The book has been updated in many areas, especially in terms of management, in keeping with an evidence based approach. The addition of the British guidelines on the management of chronic asthma is commendable. However, I cannot understand why the importance of the peak flow meter has been downplayed, unlike the previous edition which also had a graph of normal PEFR values related to height.

On the whole, Essential paediatrics can be described as user friendly, with numerous relevant line drawings and important information in the margin and in highlight boxes. Interesting and useful x rays have also been included in this edition.

Yet why does one get the feeling that this may not be the first choice textbook for many medical students? One reason is the limited number of colour photographs compared with some other books on the market. Another reason, I would suggest, is the lack of adequate definitions of some of the common disorders—for example, coeliac disease and ulcerative colitis.

Despite some drawbacks, I find that Essential paediatrics is invaluable and have no qualms about recommending it to medical students as essential reading.

MINI MARGARET NELSON
Staff Paediatrician


Their children's eating disorders pose serious problems for parents. They may seek professional help, but services in the United Kingdom are fragmented and under developed; therefore, any book that is designed specifically for parents must be welcome. Their children's eating disorders pose serious problems for parents. They may seek professional help, but services in the United Kingdom are fragmented and under developed; therefore, any book that is designed specifically for parents must be welcome.

My clinical experience is that parents appear bemused and shocked by the realisation that their daughter or son has an eating problem. They are often confused and may be angry or in denial. Parents may turn to the popular press, in which articles are sometimes sensible, sometimes sensationalist, worrying, or misleading. High profile cases, such as those of Princess Diana or Liza Zavaroni tend to dominate.

The authors have obviously recognised the lack of sensible self help and advice for parents of younger children and adolescents.

This book, therefore, is timely and fills an important gap. A lot of the information is

Few would disagree that in the past two decades, world leaders in the relatively young specialty of paediatric intensive care have emerged in Australia, Canada, and the United Kingdom. It is a welcome pleasure, therefore, that the exceptional talents of many of the individuals working in these centres have been brought together to create a much needed practical text encompassing the principles and practice of caring for critically ill and injured children.

The major strength of this book is that it takes into account one of the most important aspects of paediatric critical care, namely that the initial management of these children takes place in a wide diversity of settings. For many children ultimately admitted to a paediatric intensive care unit (PICU), the first few hours of care may have the most significant impact on their clinical course and outcome. This book targets the practitioners most likely to be involved in these situations, and provides key information and a problem based approach that is difficult to achieve in standard texts.

Like most multidisciplinary texts, the bulk of the book is divided into systems, and by and large system "disease and failure" are addressed separately. This distinction doesn't always work, and the inevitable repetition and need for cross referencing can be distracting. Some sections seem to assume no prior knowledge of paediatrics, and others appear to be aimed at the experienced paediatrician. In spite of this, there is a reasonable and logical flow to the text, and many extremely useful tables and diagrams. Key learning points and common errors are highlighted in most chapters, and there is a list of useful tips based on the considerable collective experience of the authors. This sort of approach is as close to bedside teaching that you can get in a textbook, and will be appreciated by trainees in particular.

Areas that stand out include the management of fluid and nutritional problems, toxicological and metabolic emergencies, and the diagnostic investigation of children with cardiac and more problems. It is always difficult to do justice to non-clinical topics like the ethical and psychosocial aspects of critical care, but, at least by including them, the emphasis on the whole patient remains intact. Due attention is given to non-accidental injury and the challenges of transporting patients, the latter reflecting modern, increasingly centralised paediatric intensive care.

In a subspecialty defined by rapid intervention and practical procedures, it is especially difficult to strike the appropriate balance between background detail and clinical practice. On the whole, this book accomplishes this very well. It is not a comprehensive reference text for tertiary care paediatric intensivists, but covers first line treatment to optimise the transition from emergency patient to PICU patient. Until recently, this was mainly undertaken by specialist registrars and consultant anaesthetists, but, in the United Kingdom at least, the next generation of consultant paediatricians will increasingly be called upon to manage critically ill children in those crucial first hours. That group, however reluctantly, will particularly benefit from this useful text.

ALISON SHEFLER
Consultant in Paediatric Intensive Care


In his chapter in this book entitled "Neuronal migration disorder and epilepsy in infancy", Vigeon emphasises that brain malformations represent a causal factor in 3-4% of all epilepsies, although this percentage increases to 18-20% in drug resistant epilepsies. With every new generation of MRI scanner, more and more patients with epilepsy are recognised to have a cortical developmental abnormality, and the aetiological significance of these to the development of epilepsy has opened up exciting new fields in the understanding of the pathophysiology of epilepsy and its treatment. This book is a compilation of papers presented at a meeting on epileptogenic cortical developmental abnormalities, organised by the editors. As with books produced in this way there are strengths and weaknesses, with a bias towards specific topics of interest.

The book starts with a short introduction by Frederick Andermann, followed by several chapters on cortical development and animal models. These early chapters are not easy reading but persistence is rewarded by information of direct clinical relevance from the dry basic scientific details—for example, I learnt that work with animal models has shown that pathological changes continue for years after the initial insult, explaining the delay in the development of clinical epilepsy. Furthermore, the progressive maturation of the neurotransmitter pathways could explain why neonatal encephalopathies are often catastrophic, and why children can grow out of their epileptic tendency, even with lesional epilepsy.

The later chapters on electroclinical imaging, neuropathological studies, genetics, and surgery are more relevant for the clinician. In this section, several of the authors emphasise the error of using the term "neuronal migration disorders" for all dysplasias, when the disturbance can be of neuronal proliferation or organisation and not always an arrest of neuronal migration. Of particular interest to me were the chapters on neuroradiology of malformations, neuronal migration disorders and epilepsy in infancy, schizophrenia, and genetic findings, and periventricular nodular heterotopia, especially the genetic implications of recognising these various malformations. I also enjoyed Guerrini's excellent chapter on the development of poly-microgyria. As in his other publications, he points out that polymicrogyria is the only cortical developmental abnormality which can produce ESES with eventual spontaneous remission, and when this pathology is identified on neuroimaging, surgery should be avoided. This leads us to the two chapters on the problems of resective surgery in focal developmental abnormalities and epilepsy; the first by the Montreal group and the second outlining the Italian/French experience. Both emphasise the specific difficulties of deciding the demarcation of surgical resection in these patients. I was particularly interested in the approach of Munari et al to a two step surgery, reoperating with more invasive electrocorticography if the seizures do not stop with lesionectomy alone. While acknowledging that cortical dysplasia may also be epileptogenic, Munari et al state that, in practice, the epileptogenic zone is often wider than the MRI limits of the lesion, suggesting either that the adjacent cortex is also epileptogenic or that microscopic pathology extends further than that seen on MRI images.

The book is a useful addition to the literature on cortical dysplasias. It does not aim to be a comprehensive review of epilepsy, but the reader would need considerable prior knowledge of the subject to find the book useful.

ZENOBIA ZAIWALLA
Consultant Paediatric Neuropathologist