

REVIEWS & ABSTRACTS

Abstracts originate from edited Australian Medlars, as well as from the literature of the basic sciences, orthodontics, dentistry and medicine. All inquiries regarding information on specific articles should be directed to authors. Articles or books for review should be addressed to Dr D. Fuller, Reviews and Abstracts Editor, Australian Orthodontic Journal, 22 Carpenter Street, Brighton, Victoria 3186. Offers to write abstracts or reviews of articles or texts of interest to orthodontists are welcome.

BOOK REVIEWS

McNulty, E.C. (Editors) (1988)

The Dental Clinics of North America Vol 32 No 3 Adult Orthodontics

Published by: W B Saunders July 1988

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Price: \$US56

Every four years or so the quarterly publication of *The Dental Clinics of North America* addresses an aspect of orthodontics. These well-respected publications contain clinically pertinent, up-to-date accounts of chosen topics and this edition is no exception.

The topic is 'Adult Orthodontics' and the book comprises twelve contributions from leading clinicians, researchers and authorities in the orthodontic world.

The first chapter, by Z. Davidovitch et al. describes research aimed at testing the hypothesis that tissue remodeling during orthodontic tooth movement is modulated, at least in part, by neurotransmitters and cytokines derived from the nervous and immune systems. It is postulated that cytokine synthesis could be measured to determine the bone remodeling potential of an orthodontic patient.

It seems mandatory that orthodontic texts include one or two chapters outlining the latest research in some field related to orthodontics. Whether these chapters are included as a matter of routine, to add a dash of 'science' to 'the art', or in the hope that they will be of interest to the reader, is uncertain. What is certain, to this reviewer at least, is that such chapters are not of sufficient interest to the 'average practising orthodontist' to warrant their inclusion in a general orthodontic text. The content is usually too specific and too complicated to be of general interest. The research is usually a 'rehash' of a previously published journal article and, with due respect to the authors and to the journals, I feel that the orthodontic journals are where this material belongs.

The second chapter, by L.A. Norton, looks at 'The effect of aging cellular mechanisms on tooth movement'. Although it is generally accepted that a given tooth movement takes a bit longer in an adult, there is not scientific evidence to support this assumption. After reviewing the effect of aging on the tissues involved, the author concludes, rather tentatively, that the age changes described 'should not create a barrier toward the successful completion of orthodontic therapy in most cases'.

The remainder of the book is clinically orientated and, I expect, of far more interest to the practising orthodontist.

In the third chapter, E.P. LaSota presents an outline of 'Orthodontic considerations in prosthetic and restorative dentistry'. The content is sound and sensible and the chapter would be useful as a 'check-list' for orthodontists and prosthodontists about to embark on a combined treatment plan.

'Periodontal preparation of the adult patient prior to orthodontics' is the title of the fourth chapter by B.D. Wagenberg. The author considers diagnosis, inflammatory control, mucogingival corrections and occlusal management prior to tooth movement in this well-written, well-illustrated, and very relevant chapter.

In the fifth chapter, S.J. and D.A. Behrman present the 'Oral surgeons' considerations in surgical orthodontic treatment'. The authors give their views on selected aspects of this vast subject. I'm not sure that everyone would agree with the authors' contention that treatment plans for adult patients must be devised to minimise the period of orthodontic treatment. The authors seem willing to bend over backwards to satisfy the adult patient, even to the extent of departing from the traditional staging of orthodontics and surgery and to recommending that the surgery be done prior to orthodontics.

The sixth chapter, 'Orthodontic considerations in adult surgical orthodontic cases', by P.M. Sinclair is a conventional presentation of the orthodontic side of orthognathic surgery cases. The traditionalist would find more comfort in this article which is well-written and pithy and which covers the rationale for orthognathic treatment, the overall philosophy of orthognathic treatment, sequencing, diagnosis, presurgical objectives, and post surgical and retention objectives.

C.S. Greene is the author of the next chapter, 'Orthodontics and temporomandibular disorders'. In this article the author reviews and dispels common 'Orthodontic - TMJ myths' and places the role of orthodontics into perspective... 'It may be disheartening to some orthodontists to learn that their skills do not play a major role in prevention and treatment of most temporomandibular disorders. On the other hand, they should be pleased to learn that standard practices generally do not play a specific role in causing most of those problems to emerge'.

In the eight chapter, 'Uses of implants in orthodontics', P.A. Shapiro and V.G. Kokich describe the present and future uses of implants as anchors to facilitate orthodontic and orthopaedic movement. The chapter is all very hypothetical and supporting case studies are conspicuous by their absence.

M.E. Meistrell Jr is the author of the ninth chapter, 'Treatment objectives and planning in compromised adult cases'. It is difficult to generalise when each case is 'unique' and so the author attempts to deal with this complex topic by using a series of cases to illustrate the principles of treatment planning for the compromised adult patient.

In the next chapter, 'Appliance selection - treatment objectives and esthetic concerns' the editor, E.C. McNulty, considers the various appliances which are available and how factors which are of concern to adults such as aesthetics, comfort, length of treatment time, cost of treatment, and the patient's overall dental needs influence the selection and modification of treatment techniques.

J.C. Gorman wrote the next chapter, 'Treatment

of adults with lingual orthodontic appliances'. Why anyone would persevere with this technique when they can stick braces on the outside of teeth is beyond me. Nevertheless, it seems that the need for orthodontists to be competitive has led to a continuation of this technique in the USA. The latest brackets and techniques are described and several well-illustrated case studies are presented.

The last chapter, 'Retention and post-treatment stability in the adult dentition' by R.E. Binder, considers the problem of relapse and some of the factors which are said to effect post-treatment stability. Various retainers are described and illustrated. Unfortunately, the content of this chapter is elementary and the illustrations are poor and sketchy. I find it hard to make the rather artificial distinction between retention in adult patients and retention in general and I gained the impression that the author of this chapter does too.

In summary, apart from a few chapters whose relevance to adult orthodontics is obscure, there is some good reading to be had in this publication.

David Fuller

Langland, O.E., Langlais, R.P., McDavid, W.D. and DelBalso, A.M. (Editors)

Panoramic Radiology (Second Edition)

Published by: Blackwell Scientific Publications

Price: \$105

As the usage of panoramic radiographs becomes more and more widespread, this book is bound to satisfy a steadily rising demand. The way in which the panoramic image is formed and the way in which the various anatomical structures are depicted differs markedly from other imaging modalities used in dentistry and so every user ought to be aware of the fundamentals of rotational panoramic radiography.

The book under review is divided into two main sections: the principles of the technique and the interpretation of the radiographs. In addition to the four main authors, another ten experts have contributed. Despite the large number of contributors, the book remains perfectly readable without a disturbing change of style or unnecessary overlaps. The illustrations are plentiful and of good quality. Each chapter is concluded with an extensive list of references. However an article by Kassebaum, Langlais and Triplett, which is referred to on page 103, does not appear in the reference list. Unfortunately, the year of publication is not mentioned which makes retrieval through other sources rather cumbersome.

The text starts with an historical overview of the development of panoramic radiography from Numata's 1933 experiment right through to the advanced Zonarc. The theory necessary to successfully perform panoramic radiography is described in depth. For prospective buyers, the third chapter provides information which would be invaluable in helping choose equipment. Chapters four and five comprise descriptions of specialised techniques. The final two chapters of this section discuss image receptors, processing, and doses imparted in panoramic radiography.

The second section begins with an extensive description of the normal panoramic image as well as symptoms of and cures for procedural errors. The remaining part provides many examples and descriptions of pathological conditions and their manifestation on panoramic radiographs. This is done in a systematic manner. With the exception of the section on trauma, which is fifty pages long, the chapters on interpretation show the radiographic manifestations of disease mainly on panoramic radiographs.

Although the price of this text might seem high,

the content is so valuable that I consider this outlay to be a wise investment for all current or prospective users of rotational panoramic x-ray equipment.

J.J. Keur

Richardson, Andrew

Interceptive Orthodontics (Second Edition)

Published by: British Dental Journal 1989

Available from: British Dental Association 64 Wimpole Street LONDON W1M 8AL

According to the preface, the first edition of this book, written by Andrew Richardson, Professor of Orthodontics at the Queen's University of Belfast, has sold well following an increased interest in orthodontics amongst general practitioners in Britain.

One needs to know the normal before one can begin to detect variation from normal and, with this in mind, the first chapter describes the development of ideal occlusion and the aetiology of malocclusion. Normal features of the developing dentition which sometimes cause concern to parents and to inexperienced clinicians are described. This chapter is written clearly and concisely and it is a delight to read. At the end of the chapter there is a useful chart outlining the 'does and don'ts' of interceptive orthodontics'.

Predictably, the author's underlying philosophy is British: he concedes that there is growing evidence that facial morphology may be moulded to an uncertain extent, he agrees that the lower arch form can be altered, and he seems to have a fearless compulsion to extract. The references are the familiar old faithfuls.

The second chapter looks at early interceptive treatment. The inviolable nature of the rest position is discussed and the need for occlusion without mandibular displacement is stressed. The section on the diagnosis and treatment of displacements is divided into anterior, lateral and posterior displacements.

The treatment of anterior displacements is covered comprehensively. The author suggests that, if the patient is capable of getting his incisors to meet edge-to-edge, then the displacement can be eliminated by proclining the upper incisors with a removable appliance. The possibility of using a chin-cup, which seems to be an unnecessarily cruel and complicated way of achieving the same result, is also considered.

The section on the treatment of lateral displacements is insufficient. One must assume that the typesetter left out several pages of text because no mention is made of the diagnosis and treatment of the commonest type of displacement - the lateral displacement which is caused by a relatively narrow maxilla and which results in a unilateral crossbite. This woeful omission is unforgivable in a book which is likely to be read by those who are still learning and, presumably, who are keen to know about basic interceptive orthodontic procedures such as palatal expansion.

Posterior displacements are a topical and controversial subject. The author presumes that deep anterior overbites and upright incisor cause posterior displacements but his implication that deep anterior overbites can be 'intercepted' is unconvincing. He assumes that anterior bite planes allow the posterior teeth to erupt but do not intrude the anterior teeth. He also assumes that having erupted, the posterior teeth will not intrude again (despite his claim that the rest position is inviolate) when the appliances is removed. The author favours the use of a functional appliance with built-in springs to procline the upper anterior teeth. I find that such cases where the incisors are upright and the overbite is very deep, invariably have other features of the occlusion which also

require treatment. Some orthodontists would argue that these cases are not 'interceptable' but most would agree with the author's suggestion the 'the general dental practitioner is well advised to refer posterior displacement cases and deep incisal overbites to the orthodontist'.

The last section of this chapter mentions the use of functional appliances in cases of 'increased overjet' and the use of an oral screen. This section does not explain what diagnostic criteria determine whether a case is suitable for functional appliance therapy and no details of functional appliance therapy are given. Only five references are given at the end of this chapter and the latest of these was published twenty-two years ago!

The third chapter is titled 'The treatment of crowding'. In the preamble, the author broaches the non-extraction - extraction controversy. He presents a strong but unsubstantiated bias, towards the extraction of teeth. He states, 'By far the most malleable determinant of crowding is tooth size, which may be conveniently reduced by extraction. In the context of interceptive orthodontics ... if spaces are created in the right places and at the right time, the adjacent teeth will grow into these spaces producing well-aligned arches with good approximal contacts and occlusion'. The author then goes on to discuss 'two well-recognised extraction therapies in the interceptive treatment of crowding'. The first is serial extraction and the second is extraction of first permanent molars. He also presents cases where incisors have been extracted and cases where well-positioned, sound second molars are extracted to allow third molars to erupt. If the accompanying photographs illustrate typical finished cases, then one can only assume that this type of treatment was carried out in a time and in a situation where compromise treatment was better than no treatment at all. The chapter finishes with a discussion on premature loss of deciduous teeth and some thoughts on late labial imbrication.

The fourth chapter looks at the treatment of local irregularities such as missing teeth, supernumerary teeth, early loss of deciduous teeth, loss of permanent teeth, impacted teeth, teeth of abnormal form, diastemas, habits, ectopic teeth, transposed teeth and pathology.

This book reflects an orthodontic philosophy that existed in an era when orthodontists were scarce, when fixed-appliance orthodontics was not affordable or available to many, when the general standard of dental health was poor and when patient dental awareness was almost non-existent. Times have changed and, in comparison to current orthodontic standards, it was an era of compromise.

The book is well-written and the content is generally sound but primitive and pitched at an undergraduate level. The views of the author tend to be dogmatic and anecdotal. I feel that the scope of the book goes far beyond the limits of 'interception', particularly with respect to the extraction of teeth where more damage than good could be caused by inexperienced hands. The Australian general practitioner would be unwise to base his orthodontic strategies on the concepts presented in this book and, as such, this book is not recommended.

David Fuller