

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.

LITERATURE ABSTRACTS

Rekola, M. (1986)

Changes in buccal white spots during 2-year consumption of dietary sucrose or xylitol
Acta Odontol.Scand. 44(5):285-290

The aim of this study was to measure changes in buccal white spot lesions during the consumption of sucrose and the artificial sweetener, xylitol. Standardised photographs of white spot lesions were taken 7 months after the beginning and at the end of the 2-year study. The area of the white spot lesions was measured from these photographs. It was found that the area of white spot lesions decreased in the xylitol group and increased in the sucrose group during the 17-month observation period. Caries scores decreased in the xylitol group and increased in the sucrose group, and the difference between the two groups was highly significant. These findings showed that xylitol consumption caused remineralisation of incipient white spot lesions on buccal surfaces.

David Fuller

Liu, J.T.Y. and Turner, B.M.A. (1986)

A comparative study of the efficiency of adult and infant toothbrushes in removing plaque from the teeth of patients wearing the Edgewise fixed appliance
J.Dent.Res. 65(4):493

This was a preliminary study designed to test the efficiency of two designs of toothbrush amongst children wearing Edgewise fixed appliances. On one occasion during routine attendance for treatment, the subjects were divided into two groups (mean age = 12.5 years). Their plaque was disclosed and scored, according to a modified Murray and Shaw plaque index system. The subjects then brushed their teeth for two minutes. One group used the Reach infant toothbrush, the other group used the Reach long head medium adult toothbrush. Four hundred and twenty two labial surfaces of the anterior and premolar teeth were included and examined in this study.

The infant toothbrush was able to achieve 78.2% plaque removal while the adult toothbrush achieved 79% plaque removal.

Under the conditions described there is no significant difference in plaque removing ability of these two toothbrushes.

Gerald Judowski

BOOK REVIEWS

Ring, M.E.

Dentistry - An illustrated history
Published by C.V.Mosby Company, 1985
Australian distributor: C.I.G. Medishield 11 Khartoum Road, North Ryde N.S.W. 2113
Price: \$195.50

Dr Malvin E. Ring is associate professor of dental history and literature at the School of Dentistry of the State University of New York. This book is the culmination of the many years which he has spent writing about and

researching the history of dentistry.

As the title suggests, the book is lavishly illustrated with pictures of documents, drawings, prints, paintings, sculptured reliefs, cartoons, caricatures, portraits and photographs.

The accompanying text traces the evolution of dentistry from the primitive world in the sixth century BC through the non-industrial societies, the classical world, the middle ages, the renaissance, and the seventeenth and eighteenth centuries to the most recent advancements of the twentieth century. All major civilisations are examined although there is a bias towards the American scene in the later chapters.

The text concentrates on the history of general dentistry and only one page is specifically devoted to the history of orthodontics. However, orthodontic procedures are mentioned throughout the text. It is interesting, and perhaps ironical, to note that, as early as 1757, it was advocated that bicuspid be extracted to alleviate crowding and that malaligned teeth were shifted into place by attaching them with threads to a splint of ivory. By 1797, a surgeon dentist was advertising that he could "assist nature in the extension of the jaws for the beautiful arrangement of the second set (of teeth)", Such is progress!

The major discoveries, inventions, and procedural breakthroughs are discussed as well as some of the bizarre and less successful techniques and remedies of bygone eras.

At \$195.50, this book is expensive. However it is beautifully produced. It contains 320 pages and over 300 illustrations, 80 of which are colour plates. These illustrations are excellent as is the quality of paper, printing, and binding.

This book provides hours of entertaining reading and it would make an ideal gift for a dentist. It would also make an intriguing coffee-table book or conversation piece but some of the illustrations are a little too gruesome to make the book suitable for a dentist's waiting room.

David Fuller

Marsh, J.L. and Vannier, M.W.

Comprehensive Care for Craniofacial Deformities
Published by the C.V. Mosby Company, 1985
Australian distributor: CIG Medishield, 11 Khartoum Road, North Ryde N.S.W. 2113
Price: \$170.95

This book is a well produced, general overview of craniofacial deformities and their management. It represents the senior author's experience as Director of The Cleft Palate and Craniofacial Deformities Institute at the Children's Hospital in the Washington University Medical Centre, St. Louis. The Institute had dealt with over one thousand patients at the time of publication.

The book is divided into two sections covering the general concepts involved and then clinical management. The book would appear to be intended for all medical and para-medical personnel involved in the management of children with cleft and craniofacial abnormalities. The role of each member of the team is discussed in some detail in the early parts of the book and there are very helpful glossaries explaining the particular terminologies of each of these specialities. The book contains clearly

written sections covering embryology, genetics, anaesthesia, neurological and psychological problems and, in particular, new radiological diagnostic techniques such as three dimensional C.A.T. scanning and nuclear magnetic resonance imaging. There is a very good summary of normal development and growth of the head and face which is excellently illustrated with photographs and three dimensional scanning images.

The second section of the book presents basic evaluation and treatment plans for craniofacial problems in major anatomic areas. For instance, deformities in the calvaria, orbit, midface, unilateral major facial, bilateral major facial, ear and cleft lip and palate categories are all covered. The information in these sections is well presented and easily understood, even by those who may not be aware of the minutiae involved in this specialty. The book does not go into any great surgical detail and obviously the authors did not intend this to be an operating manual for the surgeon. It is merely a book that gives an excellent overview of the deformities and the principles of treatment as carried out in the authors' institution.

The book is easy to read, well written and has an excellent layout. The illustrations and photographs are of a uniformly high standard and the patients illustrated are, in the main, representative of their conditions.

I would recommend this book strongly to all medical and para-medical personnel involved in the treatment of craniofacial or cleft disorders. It is an excellent foundation and there are good references at the end of each section. I am unaware of any other book like it covering this topic and I believe it should be in the library of all Children's Hospitals.

Anthony D. Holmes*

Carlson, D.S., McNamara Jr, J.A. and Ribbens, K.A.
Developmental Aspects of Temporomandibular Joint Disorders

Published by: Center for Human Growth and Development, 300 N. Ingalls Building, Ann Arbor MI 48109 USA

Distributor: Write directly to publisher

Price: \$US31 + \$US3 shipping

This book consists of the proceedings of the Eleventh Annual Symposium on Craniofacial Growth, held at the University of Michigan to honour Robert Moyers. Some of the papers are transcripts whilst others, written by well known researchers, have been added to provide a better coverage of the topic.

The articles focus particularly on the aetiology of temporomandibular joint dysfunction and should be of interest to those working with children and young adults as an attempt is made to address such questions as: Do certain malocclusions and skeletal patterns predispose to dysfunction? What clinical and laboratory research has been done? and, What direction should future studies take? Issues such as treatment modalities and their effectiveness in children and adolescents are not specifically addressed and some discussion on this topic would have been a useful addition.

There is an emphasis toward regarding temporomandibular joint dysfunction and functional malocclusion as the province of orthodontists who have, in the past, tended to limit their work to the diagnosis and treatment of morphologic malocclusions.

The first article deals with the evolution of the temporomandibular joint and the second article addresses the topic of joint loading. A number of papers by prominent figures such as Thilander and Solberg given an overview of previous research findings. There are two useful articles discussing aspects of neurophysiology, which is essential to an understanding of

temporomandibular joint signs and symptoms, reflex muscle activity, and the role of the higher centres in pain perception and control. Three articles discuss the effects of altered function in experimental animals.

There are several articles based on clinical research into the relationship between occlusion, craniofacial form and temporomandibular joint disorders, the most notable being from Jos Dibbets and co-workers from Groningen. They demonstrate that there are significant differences in craniofacial morphology and growth patterns associated with subjective symptoms and deviation in condylar form seen radiographically. These differences are presumed to be the result of a disturbance of cartilage proliferation.

The various researchers agree, although not unanimously, that malocclusions such as Class II, deep overbite, open bite, cross bite and functional shifts are associated with a higher incidence of dysfunction. Studies involving the use of electromyography show no clear relation between altered muscle activity due to malocclusion and temporomandibular joint dysfunction.

The somewhat threatening hypothesis that orthodontic treatment increases the incidence of dysfunction is not supported as there is an increased pre-treatment prevalence of signs and symptoms in patients presenting for treatment. Several authors consider that orthodontic therapy lowers the incidence of symptoms close to the level of a control group.

There are extensive references accompanying many of the articles which would be useful to the reader who wishes to pursue the subject further. The presentation consists of individual papers and has the inherent problem of being somewhat disjointed but the editors have avoided repetition as far as possible and the articles are loosely grouped to provide some continuity apart from the final article which seems misplaced.

This volume brings together some of the important features of the development of temporomandibular joint disorders and highlights yet again the paucity of definitive research in this field because of the inherent complexities in a system where form and function interact.

Judy Lewis

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