

Book Reviews

Excess Face Height Malocclusion: Etiology, Diagnosis and Treatment (2000)

Authors: Sten Linder-Aronson and Donald G. Woodside

Publisher: Quintessence Publishing Co. Inc., New Malden, Surrey, UK

Price: £30

ISBN: 0-86715-3389-X

This compact publication comprises eight chapters in 106 pages of well-presented, research-based information beautifully summarized in a foreword by Thomas Graber. Appropriate illustrations and 108 references assist the authors' aim of presenting the results of 30 years of research into the effect of environmental factors on craniofacial growth, in particular, the relationships between nasopharyngeal obstruction and altered mandibular posture which manifest as malocclusion. Consequently, the book should be of interest to orthodontists, ear, nose, and throat specialists, paediatricians, and students of facial growth and development.

Chapter 1 presents the inter-relationships between neuromuscular adaptation to altered respiration, particularly altered mandibular posture, tongue posture, and extended head posture, combinations of which are needed to produce malocclusions. Population standards for upper and lower anterior face height are included with examples of channelization and non-channelization to illustrate the effects of nasopharyngeal obstruction and the recovery from obstruction (e.g. adenoidectomy). Figures 1–15 summarize the respiratory obstruction cycle. Tonsillectomy studies have shown similar morphological changes to the adenoid effects, except there is an increased incisor overjet. The sections on head posture and craniofacial morphology, airway dimension and head posture in obstructive sleep apnoea patients, controversies, and clinical implications will be of special interest to readers.

Useful data sets compiled from the Burlington Growth Centre, the Örebro Adenoid Study, and the King's College School of Medicine and Dentistry Serial Growth Study are provided in

Chapter 2, and Chapter 3 details the radiographic technique compensation for enlargement and the measurements used in the three data sets.

Chapter 4 provides population standards for anterior face height, maxillary and mandibular length, and growth (distance curves), and emphasizes the importance of the vertical dimension in the development of malocclusion, while Chapter 5 compares the standards for vertical dimension from various growth centres and racial groups (North American Caucasian, European Caucasian, African-American, and Japanese), enhancing the clinical assessment among the groups.

Chapter 6 sets out the method and derivation of nasal resistance standards, whilst succinctly restating the authors' belief in the importance of nasal airway function for normal dentofacial development. This short chapter nicely puts the various methods available to measure airflow and resistance into context, and reveals the care with which they have assembled data for their studies. The importance of age-related improvements in nasal resistance due to increase in nasopharyngeal airway and reduction in lymphoid tissue is stressed.

The clinical application of vertical change in the jaws and dentition, emphasizing the importance of vertical changes to the management of what appear to be sagittal problems are concentrated upon in Chapter 7. Cephalometric identification of skeletal dysplasia is revisited with recommendation of Harvold's triangle of maxillary and mandibular length and lower facial height analysis. Useful standards for anterior face height, incisor and molar alveolar heights, soft and hard tissue nasopharyngeal dimensions, and sexual dimorphism are presented.

Chapter 8 summarizes the importance of diagnosing and managing vertical dimension deviations due to the cascade of neuromuscular changes provoked by chronic nasopharyngeal obstruction.

Overall, the book is easy to read and serves as an excellent resource for students and clinicians to contemplate the academic and practical implications of the vertical dimension.

W. J. Sampson

Cell and Tissue Culture for Medical Research (2000)

Editors: A. Doyle and J. B. Griffiths

Publisher: John Wiley & Sons Limited, Chichester, West Sussex, UK

Price: £65

ISBN: 0-471-85213-9

Cell and tissue culture has become one of the most increasing and interesting subjects in modern medical research. As a consequence, appropriate methods for new applications of cell and tissue engineering have been developed.

This book stems from the comparative manual *Cell and Tissue Culture: Laboratory Procedures* edited by A. Doyle, J. B. Griffiths and D. G. Newell, published in 1993, with quarterly additions and updates up to 1998. The present volume has been updated from the original publication and in addition, some new information is provided. The contents have been written by a team of more than 60 international scientists. It provides both detailed laboratory technical procedures and practical information.

The book contains five chapters. The first chapter covers basic laboratory set-up and procedures, including those essential requirements for successful handling of tissue and cell culture. The contributors provide substantial detail to the reader on laboratory procedures for cryopreservation, haemocytometer cell count, prophylactic use of antibiotics, techniques for preparation and storage of enzyme, and routine sub-culturing. Chapter 2 focuses on specialized techniques for cell quantification, as well as the detection and elimination of organisms (mycoplasmas, bacteria, fungi). Some opinions

on removal of fibroblasts and the most effective method for achieving this have put forward, together with the standard techniques for cell authentication. Chapter 3 emphasizes the techniques for cell characterisation and analysis and provides knowledge on techniques and detection methods for fluorescent imaging, immunohistochemistry, flow cytochemistry, and apoptosis. Chapter 4, which is the largest part of the current volume, provides an extensive and explicit review of laboratory steps on culture for different cell lines being used in medical research. The authors provide step-by-step protocols with troubleshooting tips. Chapter 5 contains informative overviews and detailed laboratory procedures in modern clinical applications of cultured cells, including an excellent basis for medical research in the field of tissue engineering and gene therapy.

Overall, this book provides a good basis for cell and tissue culture. It contains substantial detailed technical procedures for modern medical research. Certainly, it will be of great value to researchers who require practical guidance for application of cell culture, tissue engineering, and gene therapy.

Pongsri Brudvik

Langman's Medical Embryology, 8th edn (2000)

Author: T. W. Sadler

Publisher: Lippincott Williams & Wilkins Limited, London, UK

Price: £25.50

ISBN: 0-683-30650-2

The goal of this text is to provide students with an understanding of the principles of embryogenesis that can be used in the diagnosis, care, and prevention of birth defects. The presentation has been completely revised with new 3D computer images added along with several scanning electromicrographs to assist with understanding the complicated embryological process. The book is very clearly written and easy to read. It is set out in a logical sequence and is divided into three main parts.

Part I covers general embryology from gametogenesis through to birth and birth defects. The complex role of genes and genetics, in both development and birth defects, is described in a clear and precise manner with the aetiology of a number of syndromes, e.g. velo-cardio-facial syndrome explained. Chapters 2–6 cover the first week of development through to birth. Chapter 6 in particular covers the foetal period and birth defects. Part I concludes with Chapter 7, which covers foetal membranes and placenta. This latter chapter illustrates the effect that amniotic bands can have in producing birth defects.

Part II of the text is concerned with special embryology which includes all the major systems. Chapter 15 is of special interest to orthodontists because it deals with development of the head and neck which is covered in as much detail as one would expect from a general text of this nature. I found this section to be clearly written and was pleased to see one section devoted to molecular regulation of facial development. *HOX* genes seem to control the patterning of pharyngeal arches and a brief description of

them was provided here. Whilst the detail of this section was not great, it outlined the important effects of these genes in craniofacial development.

Part III is an appendix which gives the answers to the problems set in the main body of the text.

Many of the illustrations are in colour and I found these particularly useful. In addition, there were some computer illustrations, scanning electromicrographs and ultrasound images, which complement the text extremely well. There are two flow charts at the start of the book, one illustrating the periods of susceptibility to teratogenesis and a second diagrammatic flow chart showing embryonic development in days which illustrated the whole process very nicely. Throughout the text key words are highlighted and there are several sections relating development to clinical situations thus making the clinical importance of embryology all the more relevant. There are also several problem-solving sections with answers given at the back of the book. These are very useful self-help prompts to ensure the reader understands the text.

This book is just over 500 pages long and provides a general overview of embryology. The text may not be sufficiently detailed for specialist embryologists, but it is an excellent book for undergraduate medical and dental students, as well as postgraduate students and clinicians who wish to clarify their knowledge of embryology without having to resort to large, difficult to understand texts. It fulfils its role extremely well and I recommend it wholeheartedly.

D. P. Roberts-Harry

Breast-feeding, Suckling and the Sucking Urge: their Development and their Influence on the Developing Dentition (1999)

Author: Erik Larsson

Editor: Samir Bishara

Publisher: E. Larsson, Tanregleringen, Kottorget 5, SE-521 42 Falköping, Sweden

Price: US\$ 25

At the outset, I must say that I enjoyed reading this slim volume on 'suckling'.

It provides a comprehensive and helpful review of a topic whose source material is scattered widely throughout the literature.

The first chapter covers the anthropological aspects of suckling behaviour. A small criticism is that there is no reference to the small, but real risk of on demand breast-feeding leading to caries. There is then an informative chapter on historical aspects of breast-feeding, which concludes that cultural restrictions have reduced on demand breast-feeding.

The dental aspects of the subject are covered in subsequent chapters. The work provides clear evidence of the occlusal changes that can be caused by prolonged suckling. Further chapters summarize the small, but important body of evidence on the effects of suckling. The use of a pacifier is clearly and objectively justified.

I can recommend this book for anyone seeking information on this issue.

Graham J. Roberts

Orthodontic Applications of Osseointegrated Implants (2000)

Author: Kenji W. Higuchi

Publisher: Quintessence Publishing Co. Ltd, New Malden, Surrey, UK

Price: £77

ISBN: 0-86715-356-3

This book deals with the exciting and developing field of implant dentistry, which crosses the boundaries of orthodontics, surgery, and restorative dentistry. The current generation of dental implants are successful and are here to stay. This book not only covers the obvious use of dental implants to replace missing teeth in patients with hypodontia, and cleft lip and palate, but also the use of implant anchorage in orthodontic treatment. There are particularly useful chapters on 'Implant considerations in the growing child' and 'Applications of the principles of distraction osteogenesis using osseointegrated implants'.

The book has a good balance of the theoretical basis for treatment, the results of animal experiments, practical planning and procedures, and numerous case reports. Each chapter is completed

by a summary section and a comprehensive reference list. The authors have also made it clear when the evidence base is good or only poorly supported by case reports.

The text reads well and is accompanied by excellent photographs and figures as we have come to expect from Quintessence. The list of contributors from both sides of the Atlantic is impressive.

I enjoyed reviewing this book, which will remain on my bookshelf as a useful reference. It should enlighten many and inspire others. I would recommend this book to any dental specialist involved in the multidisciplinary care of patients.

Ken Hemmings

Aesthetic Dentistry (2000)

Author: Josef Schmidseider

Publisher: George Thieme Verlag, Stuttgart

Price: DEM 348; EUR 177,93

ISBN: 3-13-117731-4

It is the intention of this book to present an overview of different techniques for obtaining quality dental treatment results, with emphasis on aesthetics. The author has received assistance from 25 co-authors, including Drs U. C. Belser, G. J. Christensen, P. Schäfer, and K-J. Söderholm. It becomes clear in the Preface that the author has a strong opinion that present-day dentists should adapt their activity to the aesthetic desires of their patients. In other words, to execute not only what the patients may need, but also listen to their wants. He even favours active marketing to show prospective patients that superb techniques are now available to help them achieve their goals. The pressure to perform cosmetic dental treatment has probably been felt by most dentists in the West.

The book starts with a chapter dealing with the evolution of artificial tooth replacements. This section concludes with the statement that metal-ceramics will probably also in future play a major part in prosthetics, due to their superior physical properties compared with all-ceramic reconstructions. The following chapters cover basic principles concerning preventive dentistry, recall systems, and hygiene measures adapted to aesthetic restorations. The importance of clinical photography in modern dentistry using conventional, digital, and intra-oral cameras is stressed in an interesting chapter discussing the different methods and systems. Bleaching (tooth whitening) and micro-abrasion are given ample space with clinical recommendations. Another section deals with perioplastic surgery concerning aesthetic problems of the soft tissues. Different grafting procedures are illustrated in beautiful and instructive colour reproductions.

Several following chapters are devoted to the use of composite resins for restorative therapies. These sections deal with both the theoretical and clinical aspects. Chemistry and microstructures, as well as clinical strategies are thoroughly

discussed. In connection with composite inlays, both direct and indirect variants are discussed. Crown replacements using several different systems are dealt with schematically and clinically. The physical and chemical properties as well as technical details are included, with considerable emphasis paid to laboratory procedures. A short section discusses tooth preparations. Another chapter deals with different ceramic inlay systems, where material and technical aspects are blended with practical clinical aspects. Porcelain laminate veneers certainly deserve their place in aesthetic dentistry, and a large chapter is devoted to different aspects of this treatment modality. Copy millings are dealt with separately, as is CAD/CAM procedures in restorative dentistry. Dr. Belser has written an informative chapter on aesthetic aspects of implantology. This is followed by a section on gold cast restorations, including gold inlays! The last chapters cover orthognathic and aesthetic facial surgery, and speculations on the future of different fields within the dental profession.

The general impression of the book is favourable. It has a nice layout with photography and illustrations of an excellent standard. A few of the clinical photographs appear slightly over-exposed, making it difficult to critically examine the treatment result. For colleagues with little experience in the field of aesthetic dentistry, the book provides many ideas, and interesting alternatives in the handling of their patients' aesthetic problems. However, they will have to look elsewhere for thorough instructions on how to accomplish the results shown. The thorough bibliography at the end should be of assistance for this purpose. It should be remarked that although the author considers the use of a rubber dam to be a prerequisite for provision of lasting treatment results in bonded therapies, several pictures do not show its use. This includes clinical situations where there would be little problem in

applying the dam, and where its use would be beneficial. Finally, it must be stressed that for dentists involved with inter-disciplinary dentistry it is surprising and a major draw-back of the book that hardly a word is said about the

possibilities to use orthodontics as a supplement to improve the outcome of aesthetic restorative and prosthetic treatments.

Roy Samuelsson and Björn U. Zachrisson

Garden of Orthodontics (2000)

Author: Guiseppe Cozzani

Publisher: Quintessence Publishing Co. Limited, New Malden, Surrey, UK

Price: £105

ISBN: 0-86715-372-5

The author uses the title *Garden of Orthodontics* because he associates his work as an orthodontist with a colourful, relaxed environment. This is recognized throughout the book by soft-focus photographs of flowers on the first page of each chapter. The many impressive case presentations are demonstrated in the style of a self-critical gardener, which implies acceptance of important external forces such as growth, and cleverly avoids an impression of ostentatious showing off. Apart from the early chapters dealing with underlying themes, diagnosis, and a review of major concepts, the book is largely a beautifully presented casebook from which important lessons can be learned. Some present-day investigators might criticize it as being retrospective and anecdotal. However, this is the story of how Cozzani has selected appliances by evolution and the high level of skill he has developed using these appliances would probably more than compensate for differences between one technique, and another tested randomly and prospectively by less expert clinicians.

The book is printed in Germany in the beautifully illustrated style we have come to associate with Quintessence. It is full of high quality colour photographs and graphics, which the author calls orthograms. The page layout is excellent with script kept to a minimum. Sarah Kinnersly's translation from the Italian is nearly flawless except that orthodontic alignment of an unerupted maxillary canine is called enucleation and the chapter on stable inclination of the lower

incisors really means proclination. There are chapters showing close collaboration between the orthodontist and restorative dentists, periodontists, prosthodontists (including implants), and surgeons with an excellent review of temporomandibular disorders and an interesting chapter on unusual cases including transplantation of teeth.

It is not difficult (and not unpleasant) to get lost in this book. For example, 'selected techniques' such as bidimensional, tip-edge, Alexander discipline, lingual appliances, and Loca-system receive their scant descriptions in Chapter 5, entitled 'crossbites and malocclusions'. There is no index to guide the rambling reader. The book does not contain a single reference except general acknowledgements to innovators such as Gianelli, Kesling, and Alexander. It could not stand alone as a textbook for the young student of orthodontics, but it is probably best suited for the many orthodontists who have survived their initial training and have had their appetites sharpened by some clinical experience.

I found myself pleasurably engrossed in this book at 2 a.m. one morning. It is some time since I had such an experience with an orthodontic text. Thank you, Dr Cozzani for showing me round your garden. It was a pleasant experience. Given the quality and content, the book does not seem expensive at £105 even to a superannuated Scot.

Andrew Richardson