diagnosis, preparation, and restoration. In defining the benefits of glass-ionomer restorative material for these lesions, he states that its "greatest value lies in the restoration of minimal new lesions so that its biologic activities can be used to the maximum and it will not be exposed to undue occlusal load." He further discusses the appropriate utilization of glass-ionomer materials for sealants, tunnel preparations, proximal slot preparations, and their use in more extensive lesions involving lamination techniques.

This atlas provides both a student and a practicing clinician a very good reference guide concerning the properties, use, and handling of glass-ionomer cements. It provides a concise and thorough view of the past, present, and future application of glass-ionomers in dentistry. In closing his preface to the text, the author states, "My contribution will cease at this point. . . ." By sharing with others his obvious regard for these materials and their benefits for patients, the author has created a text that presents the best that glass-ionomers have to offer, and one that will surely continue his contribution to restorative dentistry into the future.

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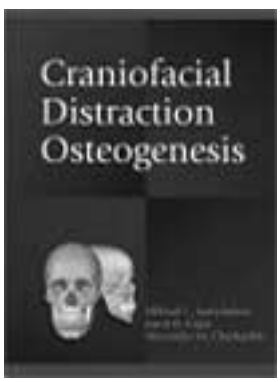

Craniofacial Distraction Osteogenesis

Samchukov, Mikhail L., Cope, Jason B., Cherkashin, and Alexander M. Mosby Publishing Co., St. Louis, MO 2003: ISBN 0-323-01134-9 (634 pp, 1350 illus (500 in color); price $179, hardcover

This magnificent text utilizes 119 international contributors and over 1300 illustrations to provide information about the history and development of distraction osteogenesis and its application to craniofacial deformities and/or deficiencies. The book is divided into 12 sections with a total of 69 chapters. Many of the sections could easily have been developed as separate textbooks targeted toward specific groups and specialty interests. The fact that the authors chose to present all of the topics in one extremely comprehensive textbook underscores a very strong theme of multidiscipline care for patients requiring treatment of facial deformities and related problems.

The authors introduce the basic principles of distraction osteogenesis developed by Dr. Gregor Ilizarov in the early 1950's.[1] Distraction osteogenesis is defined as "a biologic process of new bone formation between the surfaces of bone segments that are gradually separated by incremental traction."[2] (p. xxvii) Dr. Ilizarov's original research was based on limb lengthening of long bones, but the same principles have been successfully applied to the craniofacial bones, including the mandible, maxilla, and the alveolar ridge in preparation for implants. Distraction osteogenesis is the latest technique to correct craniofacial discrepancies.

The initial sections are devoted to the basic science of distraction osteogenesis, the biologic basis, the biomechanics, and the histiogenesis of the associated soft tissues. All of these chapters exhibit high quality graphics and illustrations to enhance the text. The authors compare the use of distraction osteogenesis with more conventional methods of redirecting growth utilizing palatal expansion or headgear or various osteotomies for adult patients. The authors also trace the development of the various distraction devices and techniques, classifying the devices as external or internal, tooth-borne or bone-borne. These chapters explore the biologic mechanisms of new bone formation under the influence of tension and the effects on soft tissue. Both radiographs and photomicrographs are effectively used to support the description of the process. One of the most compelling reasons to consider distraction osteogenesis in the treatment of craniofacial deformities is preservation and modification of the soft tissue. With a recommended rate and rhythm of distraction, the gradual movement of the bone is well tolerated by muscles, nerves, gingiva, and the periodontal ligament. This text traces the

evolution of distraction osteogenesis from long bones to mandibular lengthening, maxillary advancement, midface correction, and cranial hypolpasia.

The influence of the contributors becomes apparent in the later sections of the book. Despite the number of contributing authors, the primary authors and the editor are able to maintain the continuity of well written text and quality illustrations in most of the chapters. The majority of chapters present case reports to emphasize the principles discussed, introduce a new technique or a new distraction device. A few chapters stand out for their clarity and completeness in the discussion of the assigned topic. Chapter 25 (Mandibular Lengthening Using Intraoral Distraction) and Chapter 26 (Mandibular Symphyseal Widening by Distraction) are well organized, easily read, and present a thorough discussion including indications and contraindications

The section devoted to Alveolar Distraction is the most applicable to prosthodontic practice. Chapter 47 (Alveolar Bone Distraction for Implant Placement) stands out in this section for its comparison of techniques for ridge augmentation, the limitations of conventional methods and the indications for distraction osteogenesis. The diagrams and photographs are very helpful in describing the technique, and the list of indications found in Box 47-1 on page 424 simplifies treatment planning.

The later sections present evidence supporting the use of distraction osteogenesis as a method to correct maxillary and midface deficiencies. Following Lefort I or III osteotomies either an intraoral and extraoral distraction device is used to advance the maxilla, allowing bone formation during the distraction. The Ilizarov Scientific Center also presents the results of their extensive studies in cranial bone transport techniques to close defects of the skull. As stated by Drs. Cherkashin and Samchukov in Chapter 68, p. 593, "Distraction osteogenesis is a complex process with numerous pitfalls." It is apropriate that the final section covers potential complications and mistakes.

Craniofacial Distraction Osteogenesis is well organized, written, and referenced. It is beautifully illustrated and thoroughly covers the subject of distraction osteogenesis. Maxillofacial prosthodontists, maxillofacial surgeons, and orthodontists can best utilize this comprehensive text, especially those professionals who are part of a multidiscipline team treating patients with facial deformities. Much of the material presented is not applicable to routine prosthodontic practice. Although this book would be a welcome addition to any library, the cost and the complexity of the subject matter make it difficult to recommend this book for anyone who does not possess a special interest in the subject.

1. Ilizarov G: A new principle of osteosynthesis with the use of crossing pins and rings. In: *Collection of Scientific works of the Kurgan regional scientific medical society*. Kurgan, Russia. 1945, Kurgan Medical Society, pp. 145-160
2. Samuchukov MM, Cherkashin A, Cope J: Distraction osteogenesis: History and biologic basis of new bone formation. In: Lynch S, Genco R, Marx R, eds. *Tissue engineering and applications in maxillofacial surgery and periodontics*. 1998 Quintessence Publishing, Carol Stream, IL.

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