Calcium and Bone Disorders in Children and Adolescents

2nd, revised edition

Volume Editors

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After the first edition of ‘Calcium and Bone Disorders in Children and Adolescents,’ edited by Jeremy Allgrove and Nick Shaw, was published in 2009, this field continued to accelerate, with new discoveries concerning mineral and hard tissue physiology and pathophysiology, new means to evaluate the skeleton, and new ways to diagnose and to treat the associated conditions. Increasingly, endocrinologists and others who become involved with these disorders are called upon to translate this progress into better patient care. Skeletal dysplasias, once the purview of medical geneticists and managed by orthopaedists, are now largely understood at the gene level, and those that are still unexplained are yielding rapidly to whole exome and genome sequencing. Expectations of medical treatments for these ‘orphan’ diseases are intensifying because the disrupted molecular pathways are being revealed. Consequently, an increasing number of maladies are the charge of physicians who specialise in bone and mineral metabolism. Despite the growing use of mutation analysis to uncover and to identify gene-based disorders, there is undiminished importance for all heritable and acquired disturbances of mineral and bone metabolism in taking medical histories, performing physical examinations, and interpreting routine biochemical and conventional radiographic studies. In 2015, greater than ever clinical skill is necessary.

Accordingly, this second edition is welcome, as it provides a solid overview of the pathophysiology, diagnostic tools, and treatments for the many interesting and challenging clinical problems encountered in this field. Clinicians and researchers will have an up-to-date resource available to understand bone and mineral physiology and to diagnose, treat, and study these patients. The book is a good addition to this especially dynamic specialty of paediatric medicine.

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Preface

We were pleased with the response to the first edition of this book, which was published in 2009, with many positive comments as to its usefulness in clinical practice and, in particular, its inclusion of case histories describing the disorders. We were encouraged that Karger was willing to commit to the production of a second edition.

There have been significant advances in our understanding of various paediatric calcium and metabolic bone disorders in a relatively short time period, e.g. the evolving information regarding phosphate metabolism and the role of FGF23 in this process. In addition, advances in genetic technology due to the introduction of microarrays and whole-exome sequencing have led to the identification of the genetic basis of many more conditions. We have decided to expand the number of chapters in this second edition, with additions related to Skeletal Dysplasias, Genetics of Osteoporosis, Imaging of Bone and the approach to a child with recurrent fractures.

The success of the International Conferences on Children’s Bone Health, which were established in 1999 and will meet for the seventh time in 2015, has provided a forum for clinicians, basic scientists and researchers to meet and exchange information about paediatric metabolic bone disease. We have therefore expanded our authorship for this edition to include international colleagues in addition to our colleagues from the UK. When we started to develop an interest in paediatric calcium and bone metabolism 30–35 years ago, neither of us would have predicted how much the field would have progressed and expanded to the extent it has.

We are grateful to all of the authors for sending us their manuscripts in a timely manner, and we would like to thank all of the clinicians who have allowed us to include their cases. Finally, we would again like to thank our wives, Vicki and Natalie, for their forbearance when we spent many hours during evenings and weekends in the production of this second edition.

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