
PREFACE

This book focuses mainly on clinical surgical applications using bone morphogenetic proteins (BMPs) as components in bioimplants inducing locally new bone formation. Its second aim is to contribute to our knowledge of the currently topical issue of tissue engineering.

As a matter of fact, this volume will be the fifth in a series appearing during a ten-year period — providing information on bone transplantation techniques, biomaterials and growth factors. As allied to this present volume, *Advances in Skeletal Reconstruction Using Bone Morphogenetic Proteins*, the mention of past volumes, collected and edited by this editor, is of importance. These volumes are:

New Trends in Bone Grafting (1992),

Functional Delivery Systems for Bone Inducing Proteins (1993),

Bone Morphogenetic Proteins, Biology, Biochemistry and Reconstructive Surgery (1996), and

Skeletal Reconstruction and Bioimplantation (1997).

Two years ago, the present editor approached clinicians and researchers working in different clinical disciplines, such as plastic and reconstructive surgery, maxillofacial surgery, orthopaedic surgery, spinal surgery, arthroplastic surgery, bone lengthening surgery, dentistry, dental surgery, as well as researchers working with biomaterials and BMPs and companies engaged in the purification and testing of BMPs. Researchers and clinicians at special conferences and meetings were also contacted and queried on their interest in research and clinical applications in curing previously unsuccessfully treated clinical cases, and about the use of BMPs including bioimplants as an aid in bone transplantation procedures.

Clinicians and researchers from Africa, Asia, Europe, North and South America were contacted. Discussions were undertaken with people in 27 countries, namely Australia, Belgium, Brazil, Canada, China, Croatia, the Czech Republic, Denmark, Finland, France, Germany, Hong Kong, Hungary, Israel, Italy, Japan, Norway, Poland, Spain, South Africa, Sweden,

Switzerland, the Netherlands, the USA, the United Kingdom (England) and Uruguay.

The interest of authors participating and writing chapters for this volume is apparent. There are altogether 26 chapters in which more than half of the contributions have a special message to clinicians working in reconstructive surgery. The fact is that clinical reports in the literature have so far been very few in number. The book contains reports on clinical cases using bovine BMP extracts, recombinant human bone morphogenetic proteins (rhBMP) -2 and -7 — many of which are unique and are appearing for the first time.

There may be more than 1000 clinical cases treated with bovine BMP extracted from cow long bones and more than 100 treated with extracts from human bone tissue, about 1100 clinical cases treated with rhBMP-2 and about 700 with rhBMP-7. There must be a permit from the federal drug administration in the USA for special well-motivated clinical tests with recombinant BMPs. In European countries, governmental approval is also required for clinical tests with recombinant or extracted BMPs. In Finland, about 30 cases of unsuccessfully treated clinical cases were finally managed with bioimplants containing bovine BMP extracts. This clinical test was accepted and approved by government officials.

The course of editing this volume was prolonged owing to a number of problems, including the delayed submission of chapters due to doubts in the procedure and the need for extensive editing of manuscripts.

The editor is, however, very satisfied with the final result, although the primary goal of the volume was simply to report on clinical cases treated with BMPs. The fact is that so far there are few final results of treatment available; the time for a clinical issue is probably approaching at a later point. In view of these circumstances, the chapters dealing in expression systems and the testing of BMPs, as well as investigative tests on the experimental level must thus be accepted.

The editor would like to thank all authors who have devoted their time in writing the chapters. Secretarial help, with special thanks to Lea Huusko, and assistance from other persons who have contributed in one way or another are also recognized. My warmest thanks go also to Professor A.

Hari Reddi, Ph.D., Center for Tissue Regeneration and Repair, Department of Orthopedic Surgery, University of California, Davis School of Medicine, Sacramento, California, USA for writing the introduction to this book.

T. Sam Lindholm, M.D., Ph.D.
Professor of Surgery (Orthopedics)