

Preface

## Orthobiologics



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*Guest Editor*

Significant advances have been made in the field of foot and ankle orthopedics, especially in the treatment of fractures and the complication of delayed unions and nonunions. Improvements in internal fixation, advancement of soft tissue handling, and novel forays into the biologic manipulation of fractures—such as growth factors, stem cell augmentation, electricity, electromagnetic field, and ultrasound—have significantly improved clinical outcomes. Despite these advancements, of the estimated 6 million fractures sustained the United States, 5% to 10% continue to have difficulty in healing.

This orthobiologic collection of articles is a cutting-edge compendium of biologic-driven concepts for treatment of foot and ankle injuries, specifically fracture healing and nonunions. Concepts to be explored include the role of new potential adjuncts such as application of bone morphogenic protein (BMP) growth factor, use of autologous platelet concentrate, and augmentation of stem cell concentrate. Other articles review new studies in electricity and ultrasound and the role of pulsating electromagnetic field (PEMF) in high-risk clinical challenges (ie, diabetes mellitus [DM] Charcot arthropathy). New advances in biodegradable materials as novel plates/screws are also reviewed in detail.

The second section of this issue focuses on controversial yet biologically driven treatments affecting foot and ankle practice. We explore the controversial role of COX-2 inhibitors in postoperative pain upon foot and ankle fusions. In addition, we address the potential roles of new surgical techniques such as

distraction arthroplasty for posttraumatic ankle arthritis and hemi-arthoplasty for severe hallux rigidus. Finally, the role of shock wave therapy for plantar fasciitis and its underlying mechanism of treatment is discussed.

Clearly we sit on the shoulders of giants who came before us. Each topic in this issue reflects the diligence of critical research and the constant forays of clinical scientists using novel biologic concepts to advance the treatment of the foot and ankle.

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