Preface

Minimally Invasive Fracture Repair

Throughout the history of fracture repair, there are numerous descriptions of minimally invasive repair implants and techniques that have fallen in and out of favor. In 1886, Carl Hansmann invented the first plate and screws (which were locking) for use in humans. They were placed externally with the plate above the skin and the screws going through the skin into the bone, ultimately an early example of minimally invasive fracture repair (MIFR). Eventually the plates and screws made their way under the skin, and over time the preferred techniques of fracture repair involved opening the fracture site and precise anatomic reduction. Through research and education, the biologic fracture environment came into focus in the late 1980s, and in 1990, the limited contact dynamic compression plate was introduced, with the goal of minimizing the plate damage to the periosteum. This led to the resurgence of locking implant use in the mid 1990s with further emphasis put on reducing damage to the periosteum and disturbance of the peri fracture environment.

The concept of minimally invasive plate osteosynthesis (MIPO) was first introduced in 1997 by Christian Krettek and Harald Tscherne and revealed rapid bone healing and larger callus formation. In 2008, published research into plate biomechanics and MIPO entered the veterinary literature and, over the past decade, continued attention to MIFR techniques and implants has occurred.

In this issue of the Veterinary Clinics of North America: Small Animal Practice, the authors have built upon the excellent 2012 MIFR issue. The editors are grateful to the contributing authors for their time and efforts to ensure that the most up-to-date research and information available are included and summarized effectively in the following articles.

MIFRs are technically more demanding, and a thorough working knowledge of anatomy and the implants to be used is of paramount importance. Understanding bone healing and biomechanics is also important in the decision-making process when
choosing between fracture repair techniques. In the early articles of this issue, we focus on fracture biomechanics and biology as well as techniques for reduction and general guidelines of MIFR. We then focus on regional skeletal systems and techniques unique to those systems. Since the majority of the literature published on this topic is focused on the canine, we end this issue with an article on the important MIFR differences for the feline.

Karl C. Maritato, DVM
MedVet Medical and Cancer Centers for Pets Cincinnati
3964 Red Bank Road, Fairfax, OH 45227, USA

MedVet Medical and Cancer Centers for Pets Dayton
2714 Springboro West Road, Moraine, OH 45439, USA

Matthew D. Barnhart, DVM, MS
MedVet Medical and Cancer Centers for Pets
300 East Wilson Bridge Road
Worthington, OH 43085, USA

E-mail addresses:
kmavitato@medvet.com (K.C. Maritato)
barnhart@medvet.com (M.D. Barnhart)