

Management of Segmental Tibial Bone Defects With a Motorized Intramedullary Bone Transport Nail: A Case Review With Follow-Up

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Abstract

Large segment bone defects of the tibia are challenging problems. Although caused by a wide range of conditions, tibial critical bone loss defects often require complex reconstructive plans with prolonged inability to weight-bear on the effected extremity. Reconstruction options frequently require harvesting of autograft leading to further morbidity. Distraction osteogenesis allows reconstruction of large segmental defects of the tibia while avoiding donor site morbidity. Historically, distraction osteogenesis of tibia was most reliably performed with circler ring external fixation. This process allowed early weight-bearing but unfortunately has considerable drawbacks. Negative effects include pin tract irritation and inability to wear normal clothes. The advent of the bone transport nail now allows management of tibial critical bone loss defects through distraction osteogenesis negating the need for external fixation. This new technique allows treatment of large segmental tibial defects by means of distraction osteogenesis with an all-internal device avoiding the negative effects of external fixation while simultaneously allowing early weight-bearing.

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Conflict of interest statement

J. W. Stoneback has received research support and is a paid speaker for Hanger, and is a consultant for NuVasive, and Smith & Nephew. G. S. Marecek has received research support from BoneSupport AB and is a consultant for BoneSupport AB, DePuy Synthes, Globus Medical, NuVasive, Smith & Nephew, Stryker, and Zimmer Biomet. He is a board or committee member of the Western Orthopaedic Association and the Orthopaedic Trauma Association. The remaining author reports no conflict of interest.