KEY PROCEDURES

THE USE OF SUPRAMALLEOLAR OSTEOTOMIES IN POSTTRAUMATIC DEFORMITY AND ARTHRITIS OF THE ANKLE

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Abstract

Osteoarthritis of the ankle is a debilitating musculoskeletal disease that affects approximately 1% of adults worldwide. The most common etiology of ankle osteoarthritis is trauma. In general, patients with ankle osteoarthritis are 12 to 15 years younger than patients with hip or knee osteoarthritis. More than 50% of all patients with ankle osteoarthritis exhibit a substantial concomitant hindfoot deformity on the supramalleolar and/or inframalleolar level. Different treatment options for ankle osteoarthritis, including joint-preserving and non-joint-preserving surgical procedures, have been described in the current literature. Supramalleolar osteotomy is a joint-preserving option that can be considered in patients who have asymmetric ankle osteoarthritis, a partially preserved ankle joint, and a concomitant supramalleolar deformity.

The primary goal of the supramalleolar osteotomy is to realign the hindfoot and, specifically, the spatial relationship between the talus and the tibia in order to restore normal ankle biomechanics and normalize load distribution within the ankle joint. Different surgical techniques of supramalleolar osteotomy that are based on the underlying deformity, e.g., varus versus valgus, are described. The major steps of the procedure, which are demonstrated in this video article, include (1) exposure of the distal end of the tibia, (2) determination of the osteotomy site, (3) performance of the supramalleolar osteotomy, (4) mobilization of the osteotomized distal end of the tibia, (5) internal fixation of the osteotomy site, (6) additional balancing, and (7) step-by-step wound closure. In some instances, additional procedures are required to balance the ankle joint, e.g., inframalleolar osteotomies, arthrodeses, ligament reconstructions, and tendon transfers.

The postoperative rehabilitation requires non-weight-bearing activity for 6 to 8 weeks postoperatively. Intraoperative, perioperative, and postoperative complications can occur and are discussed in this article.

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