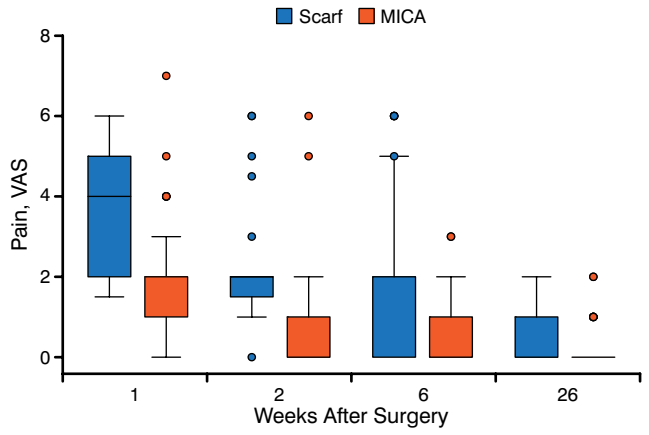
Figure 1. Effect of Minimally Invasive Chevron/Akin Osteotomy on Pain



MICA, minimally invasive chevron/akin osteotomy; VAS, Visual Analog Scale.
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(Figure 1). The operation time was longer with the scarf approach (mean of 33.7 minutes) compared with the MICA approach (mean of 29.7 minutes). In addition, the mean length of the combined scar was 108 mm in the scarf group compared with 24.2 mm in the MICA group.

In the scarf group, complications included 2 cases of mild second metatarsalgia and 1 case of increased depth of forefoot. In the MICA group, there were 6 cases of screw removal. Overall ratings of the scarf or MICA methods indicated that patients were satisfied (7 vs 4, respectively) or extremely satisfied (18 vs 21, respectively); no patients reported being unsatisfied or extremely unsatisfied with either method.

According to Dr Lam, the use of MICA was associated with less pain, greater improvement in HVA, shorter operation time, and shorter scar length. Overall, the same number of patients was satisfied with either method.

Fresh Osteochondral Allograft for Ankle Arthroplasty

Written by Emma Hitt Nichols, PhD

A bipolar fresh osteochondral allograft is a treatment option with good clinical outcomes for patients with severe osteoarthritis. According to Sandro Giannini, MD, University of Bologna Istituti Ortopedici Rizzoli, Bologna, Italy, prostheses are widely used to treat severe osteoarthritis; however, fresh osteochondral allografts may be a beneficial treatment alternative.

Via the use of an allograft, 1 cm of subchondral bone gives rise to viable cartilage and can result in complete osteointegration. The purpose of this study was to evaluate clinical outcomes among patients with severe osteoarthritis who were treated with fresh osteochondral allografts.

Fresh osteochondral allografts are currently best used in patients < 50 years old. Contraindications include serious joint deformity, significant osteoporosis, osteonecrosis, vascular pathologies, infection, and severe ligament instability. In a case series of 64 patients with a mean follow-up time of 32.8 months, 32 patients received an allograft via lateral approach and 32 received an allograft via anterior approach [Giannini S et al. *Foot Ankle Int.* 2013; Giannini S et al. *Foot Ankle Int.* 2010]. Following the procedure, patients wore a cast for 15 days. After cast removal, active and passive mobilization began, and a below-knee prosthesis was used to prevent ambulation of the ankle. Patients could bear total weight after 6 months.

The mean age of patients who received an allograft (lateral or anterior approach) was about 35. The preoperative American Orthopaedic Foot & Ankle Society (AOFAS) score was 33.1 in the lateral approach group and 26.6 in the anterior approach group. The 6-year AOFAS score significantly increased to 60.4 in the lateral approach group ($P < .0005$) and to 72.3 in the anterior approach group ($P < .0005$). Patient satisfaction was reported at 76%, with no significant difference between the 2 groups. In addition, a bioptic cartilage harvest demonstrated that > 95% of chondrocytes were viable. Genetic typing demonstrated the exclusive presence of the recipient DNA in 10 of the 15 allografts, with an additional 2 samples having a mixed DNA profile [Neri S et al. OARSI 2011; (abstr 505)].

In both groups, there were 6 failures (12 total in the case series). At follow-up, there was evidence of increased arthritis that did not necessarily correspond with the clinical result. Interestingly, data from a cohort of patients receiving immunosuppressant therapy within the case series suggest that immunosuppression resulted in a better clinical score, a lower rate of radiographic arthritis at 2 years, and better histologic results of the transplanted cartilage.

According to Prof Giannini, the use of fresh osteochondral allograft is a potential treatment option for severe osteoarthritis and may be especially useful in younger patients. However, he indicated that several questions remain concerning the mechanisms of allograft recolonization, the role of the degenerated joint environment on allograft success, and the effect of the immunologic response on the allografts. These questions are currently being evaluated in animal models.