Osteochondral autograft transfer combined with supramalleolar osteotomy for the treatment of osteochondral defect of the talus in varus ankle

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Category: Ankle, Ankle Arthritis, Arthroscopy, Sports

Keywords: osteochondral lesion, varus ankle, supramalleolar osteotomy, autograft talus

Introduction/Purpose: Osteochondral lesion of the talus (OLTs) is among the most common foot and ankle disorders. Varus ankle malalignment causes stress concentration on medial side of the joint, resulting in OLTs and osteoarthritis. For large symptomatic OLTs (> 15mm in diameter) involving posteromedial aspect of talar dome, osteochondral autograft transplantation is usually warranted. This article highlights the distal tibial double osteotomy for the management of patient with concomitant large OLTs and varus ankle malalignment.

Methods: From January 2012 to July 2015, 15 patients (8 males, 7 females) received the surgery in our department. The average age was 55.4 (range, 34 to 69) years old. Oblique medial malleolar osteotomy was performed to expose the talar lesion, following by osteochondral autograft transplantation and distal tibial opening-wedge osteotomy. Weight bearing X-rays were obtained for the measurement of tibial articular surface (TAS) angle and tibial lateral surface (TLS) angle. The American Orthopaedic Foot and Ankle Society-Ankle and Hindfoot (AOFAS-AH) questionnaires and Visual Analog Scale (VAS) were evaluated for ankle function. In 5 cases arthroscopy was performed 12 months postoperatively and the cartilage repair was assessed with the criteria of the International Cartilage Repair Society.

Results: Thirteen patients completed the follow-up with a mean of 21.2 months. The average talar lesion was 170.0mm², and the average depth was 11.4mm. The mean time of bone healing was 8.5 weeks. No patient reported donor site morbidity by the last follow-up. The mean AOFAS-AH score and VAS score improved from 53 to 90 points (p < 0.05), 6.7 to 1.9 points (p < 0.05), respectively. The mean TAS angle improved from 83.1 to 90.3 degrees (p < 0.05). The radiolucent area of the cysts disappeared on the plain radiographs in all cases. The mean International Cartilage Repair Society arthroscopic score from follow-up arthroscopy was (9±1) points.

Conclusion: The use of osteochondral autograft transfer combined with supramalleolar osteotomy is an effective option for the treatment of osteochondral defect of the talus in varus ankle. It provides excellent visualization of the talar defect and favorable biomechanical environment for the ankle joint.