

Case Series - Clinical application of CaReS[®]-1S (Cartilage Regeneration System - One Step) in 5 patients with focal cartilage defects in the ankle

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Question: We report on 5 patients, in which 2010 according to the diagnosis of osteochondral lesions (OD classification III/IV) in the ankle CaReS[®]-1S was implanted. Articular cartilage damage in the ankle still represent a special challenge, since there is currently no satisfactory therapy.

The previously known treatment of articular cartilage defects includes a number of different methods such as joint lavage and debridement, the opening of the subchondral bone (microfracture, transcortical drilling), the abrasion of the affected area or cartilage transplantation of autologous or homologous bone-cartilage cylinder.

The implantation of chondrocytes in cartilage defect zones (ACI) is now integrated into clinical practice and a novel method for the treatment of articular cartilage defects. However the ACI at the ankle is excluded from reimbursement in Germany (decision of the Federal Committee of Hospitals and Health Insurance of 18 February 2010).

Methodology: In 5 patients, two female patients, aged 31 and 50 years and three male patients, aged 51, 51 and 22 years, CaReS[®]-1S was implanted in 2010 after the diagnosis of traumatic cartilage damage in the ankle. The implantation took place in all five cases by open surgery after osteotomie.

The patients were evaluated using the American Orthopaedic Foot and Ankle Society score (AOFAS score). The follow-up was performed at 8 weeks, 3 months, 6 months and in one case at 12 months.

Result and conclusion: The postoperative treatment was uneventful in all patients and proceeded according to a schedule set.

In the diagrams the results of the total scores (maximum: 100), and the two sub-scores ,pain' (maximum: 40) and ,function' (maximum: 50) are represented (in the diagrams, the values of the 5 patients are averaged).

All three plots show a marked improvement in the total score, as well as in the presentation of pain and function.

The implantation of CaReS[®]-1S is a new alternative for the treatment of articular cartilage damage in the ankle. CaReS[®]-1S is a primary cell-free three-dimensional collagen type I matrix construct that is populated by cells from the area surrounding the implantation site. The specific characteristics of the gel matrix leads to a differentiation of stem and progenitor cells to chondrocytes. These find an optimal environment and express predominantly collagen type II.

