

4-5 Year Results Following AMIC Procedure with Collagen Matrix in Cartilage Reconstruction of the Talus

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Introduction/Purpose: In recent years, the autologous matrix-induced chondrogenesis (AMIC) has established itself in the treatment of cartilage defects of the talus. In this prospective study, the 4-5 year results following arthroscopic AMIC technique at the Talus will be presented.

Methods: 97 patients have been treated with this method from August 2009 until September. 48 patients (26 F, 22 M) with a mean age of 36.5 ± 3.9 years (15-69) and a BMI of 24.8 ± 3.9 (19.1 to 39.6) met the inclusion criteria. The Hannover scoring system (HSS) and VAS score for pain, function and satisfaction at baseline and 1 year (FU1), 2 years (FU2) and 4.4 years (FU3) postoperatively have been evaluated.

Following arthroscopic exploration to control the inclusion criteria, the cartilage defect was debrided thoroughly. Subsequently, microfracturing has been performed with a special swan neck awls and then PRP was injected over the subchondral plate. Afterwards, covering of the defect area was carried out with the collagen matrix (AMIC) which was impregnated with PRP, which was then fixed with fibrin glue.

Results: The HSS improved from 55.6 ± 12.18 baseline to 82.3 FU1 ± 15.64 ($p < 0.05$ compared to baseline.), FU2 88.8 ± 7.43 ($p < 0.05$ compared to baseline) and FU3 89.7 ± 8.3 ($p < 0.05$ compared to baseline) with a significant improvement over the entire period of $p = 0.008$. VAS for pain was 4 ± 2.74 at the Baseline and improved at FU1 to 7.8 ± 2.73 ($p < 0.05$, compared to baseline.), FU2 8.9 ± 1.01 ($p < 0.05$) and FU3 9.3 ± 1.26 ($p < 0.05$) with a significant improvement over the entire period of $p = 0.001$. Similar results were observed in the VAS scores for function and satisfaction.

There were no infections or surgical complications.

Conclusion: The arthroscopic AMIC procedure also shows good mid-term results in treatment of cartilage defects of the talus. It is a promising and safe procedure in the cartilage therapy with a low complication rate through an arthroscopic surgery.