7-Year Follow-Up of Matrix-Induced Autologous Chondrocyte Implantation of Talus Articular Defects

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7-year MACI of the Talus Follow-up

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- My disclosure is in the Final AOFAS Mobile App.
- I have no potential conflicts with this presentation.
Introduction

- Osteochondral lesions of the talus (OLT) that fail initial arthroscopic microfracture can be treated with autologous chondrocyte implantation (ACI) techniques.

- The authors previously published 2-year follow-up data on ten patients treated with a third generation ACI technique, Matrix-induced autologous implantation (MACI)\(^4\).

Purpose

The purpose of this study was to evaluate the efficacy of MACI seven years post operatively and to determine whether this technique has long-term patient satisfaction results similar to the prospective 2-year results.

Hypothesis

The patients will have similar scores to their respective two-year data, demonstrating long-term durability of the MACI implant.
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- **Methods**
  - MACI procedure using talar chondrocytes as source
  - Extended portal approach, no osteotomies.
  - 9/10 patients returned the surveys
  - 4 males, 5 females
  - Age: 48.8 (±14.6) at time of 7-yr survey
  - SF-36 health survey and AOFAS hindfoot evaluation were used to determine patient outcomes at 7-years after MACI
  - Repeated Measures ANOVA and post-hoc tests to determine significance between time points.
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- **Results**
  - **AOFAS hindfoot scores**
    - Significant improvement from preop to 7-yr
      - Pre = 65 (range 42-76), 7-yr = 85 (range 36-100)

(*= p<0.05)
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**Results**

- **SF-36 Health Survey**
  - Physical functioning, lack of bodily pain, and role physical showed improvement at 1, 2, and 7-years postoperative
  - Social functioning showed improvement at 7-years postop

(*=p<0.05, **= p<0.01, ***= p<0.001)
Conclusion

The results of this study demonstrate that MACI has long-term effectiveness in treating full-thickness lesions of the talus using harvested chondrocytes from the talus without malleolar osteotomy.
Other Studies:


- Prospective study; 10 patients, 5 males, 5 females
- Patients failed microfracture/curettage and then had a MACI
- AOFAS and SF-36 Scores at preop, 1, and 2-yrs postop
- AOFAS significantly improve at 1-yr and was maintained at 2-yrs
- SF-36 showed significant improvement at 1 and 2-yrs in physical functioning and lack of bodily pain.
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**Other Studies:**

  - 5-year follow-up with good clinical outcomes
  - Similar AOFAS scores to this study
    - Pre = 36.9 ± 6.6
    - 5-yr = 83.9 ± 13.6

  - 21/22 patients evaluated at 5 yrs
  - AOFAS improved-
    - Pre = 70.1 ± 8.3
    - 5-yr = 95.3 ± 5.6
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• With successful long-term results, we continue to recommend it as a viable option in patients who fail initial curettage and microfracture.
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• **Bibliography:**


