

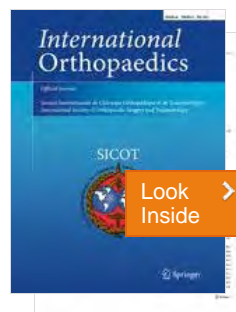
## Original Paper

International Orthopaedics

May 2015, Volume 39, Issue 5, pp 901-905

First online: 22 March 2015

# Outcomes of acute Achilles tendon rupture repair with bone marrow aspirate concentrate augmentation

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## Abstract

### Purpose

Optimal treatment of acute Achilles tendon ruptures remains controversial. Positive results using stem-cell-bearing concentrates have been reported with other soft-tissue repairs, but no studies exist on outcomes of bone marrow aspirate concentrate (BMAC) augmentation in primary Achilles tendon repair.

### Methods

We reviewed patients with sport-related Achilles tendon ruptures treated via open repair augmented with BMAC injection from 2009 to 2011. Data on operative complications, strength, range of motion, rerupture, calf circumference and functional improvement through progressive return to sport and the Achilles tendon Total Rupture Score (ATRS) were analysed.

### Results

A total of 27 patients (28 tendons) treated with open repair and BMAC injection were identified (mean age  $38.3 \pm 9.6$  years). At mean follow-up of  $29.7 \pm 6.1$  months, there were no reruptures. Walking without a boot was at  $1.8 \pm 0.7$  months, participation in light activity was at  $3.4 \pm 1.8$  months and 92 % (25 of 27) of patients returned to their sport at  $5.9 \pm 1.8$  months. Mean ATRS at final follow-up was 91 (range 72–100) points. One case of superficial wound dehiscence healed with local wound care. No soft-tissue masses, bone formation or tumors were observed in the operative extremity.

### Conclusions


Excellent results, including no re-ruptures and early mobilisation, were observed in this small cohort with open Achilles tendon repair augmented by BMAC. No adverse outcomes of biologic treatment were observed with this protocol. The efficacy of BMAC in the operative repair of acute Achilles tendon ruptures warrants further study.

Level of Evidence: IV - Therapeutic



### Keywords

Achilles – Tendon – Rupture – Repair – Biologic

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» [International Orthopaedics](#)  
» [Volume 39, Issue 5](#), pp 901-905

#### Cover Date

2015-05

#### DOI

10.1007/s00264-015-2725-7

#### Print ISSN

0341-2695

#### Online ISSN

1432-5195

#### Publisher

Springer Berlin Heidelberg

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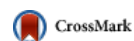
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