Patient Reported Outcomes in Athletes following ORIF of Jones Fracture
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Introduction/Purpose: Treatment of fractures to the 5th metatarsal metaphyseal-diaphyseal junction, known as Jones' fractures, can present challenges in the elite athlete significantly prolonging return to play. Non-operative treatments in elite athletes result in a high incidence of nonunion and secondary fracture. Primary screw fixation remains the standard of care for athletes. However, delayed union and nonunion are still very common despite surgical fixation due to the fracture occurring in a watershed area with decreased healing potential. Bone marrow aspirate concentrate (BMAC) is an autologous source of hematopoietic and mesenchymal stem cells that has been used in the treatment of poor healing fractures. We hypothesize that open reduction internal fixation (ORIF) augmented with BMAC will improve patient-reported outcome measures following Jones' fractures in athletes.

Methods: This study was a retrospective review of elite athletes that underwent intramedullary screw fixation augmented with BMAC for Jones' fractures at an academic medical institution. All patients were assessed preoperatively and postoperatively to determine their pain outcomes based on their visual analog score (VAS). Student's t test was used in statistical comparison of the preoperative and postoperative outcome scores. P < 0.05 was considered significant.

Results: A total of 16 elite athletes were treated with ORIF with BMAC for a Jones fracture with a mean age of 22.2 years (range 19–26). There were 9 males and 7 females included in the study. Type of athlete ranged across various sport activities, with all patients functioning at a collegiate and/or professional level of elite athletics. The mean visual analog score for pain decreased from 6.2 preoperatively (range 3-8) to 2.75 postoperatively (range 1-6 p = 0.06). All patients have returned to elite competitive sport activity with reports of minimal to no pain.

Conclusion: Intramedullary screw fixation of Jones' fractures with BMAC results in optimal surgical outcomes in the elite athlete. A higher powered and long-term study with validated patient-reported outcomes is needed to confirm our observations.

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