Lasting Relief from Injection of Intra-articular and Intraosseous Bone Marrow Concentrate and Platelet Rich Plasma for Severe Midfoot Osteoarthritis: A Case Study

Danielle Rehor, MS-4[1], M. Scott Draper, D.O.[1], Alex Roney, OMS4[2], Michael J. Khadavi, M.D. [3]
[1]The University of Kansas School of Medicine-Kansas City, Kansas City, Kansas, Department of Physical Medicine and Rehabilitation
[2]Liberty University School of Osteopathic Medicine-Lynchburg, Virginia
[3]Kansas City Orthopedic Alliance-Overland Park, Kansas

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Introduction. Osteoarthritis (OA) has been traditionally attributed to normal degeneration with aging and use but recent research suggests changes in subchondral bone architecture and composition play a larger role. This case study aims to describe the effect of intra-articular and intraosseous injections of orthobiologics such as platelet-rich plasma (PRP) and bone marrow aspirate concentrate (BMC) for midfoot OA. Orthobiologics have been studied in larger joints such as the knee, however, no published reports exist for treatment of midfoot OA.

Methods. This is a case study of a 62-year-old female with severe midfoot osteoarthritis who has exhausted conservative treatment options (NSAIDs, custom orthotics, bracing, steroid injections, physical therapy). PRP and BMC are prepared by drawing peripheral blood and bone marrow from the posterior superior iliac spine, processed in a centrifuge, and injected into joints with identified OA clinically and radiographically. Descriptive statistics were calculated for baseline characteristics and outcomes as changes in Foot Functional Index (FFI), the Foot and Ankle Ability Measure (FAAM), and the Visual Analog Scale (VAS) over time.

Results. Our patient noted improvement in subjective pain and decreased functional limitations. Pain relief began as early as 6 to 8 weeks after injection, with more significant relief by the 3-to-6-month mark.

Conclusions. Injection of bone marrow concentrate and PRP both intra-articular and intraosseous provide significant and lasting relief for severe midfoot osteoarthritis. Further research is needed to quantify subchondral bone edema pre- and post-procedure along with determining clear protocols for injection and standardization of treatments.