

INTRAOSSSEOUS AND INTRA-ARTICULAR INFILTRATION OF PLATELET-RICH PLASMA FOR SEVERE KNEE OSTEOARTHRITIS: CASE REPORT

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Background

The prevalence of osteoarthritis (OA) continues to rise alongside increasing life expectancy. In advanced stages, subchondral bone marrow lesions (BMLs) are commonly observed and are closely associated with pain severity and disease progression. Intraosseous (IO) platelet-rich plasma (PRP) infiltration, as described by Mikel Sánchez, has shown promising outcomes. This case illustrates a targeted regenerative approach involving IO PRP administration to BMLs identified via magnetic resonance imaging (MRI).

Case report

A 68-year-old retired woman presented with longstanding bilateral mechanical knee pain, predominantly affecting the right knee. Symptoms were exacerbated by stair use, inclined walking surfaces, and prolonged sitting ("movie theater" sign). Baseline scores were 9/10 on the Numeric Pain Rating Scale (NPRS) and 49/100 on the Western Ontario and McMaster Universities Arthritis Index (WOMAC), indicating significant functional limitation. Physical examination revealed a positive Clarke's test. MRI of the right knee demonstrated Grade IV chondromalacia (Outerbridge classification) of the lateral patellar facet and lateral femoral condyle, with BMLs appearing as poorly marginated hyperintensities on fat-suppressed T2-weighted images. PRP was prepared by processing 52 mL of peripheral blood using the Magellan PRP system, yielding 10 mL of leukocyte-rich PRP with a platelet concentration of 745,000/ μ L, an absolute platelet count of 7,450,000, a 3.5-fold increase over baseline, and a platelet retention rate of 67.5%. Under fluoroscopic guidance with contrast, which confirmed the absence of vascular extravasation, 2 cc of PRP were infiltrated into the patella and 1.5 cc into the lateral femoral condyle. An additional 6 cc were administered intra-articularly under ultrasound guidance. Two weeks post-procedure, the patient reported complete resolution of symptoms, with sustained improvement lasting 10 months. At the 11-month follow-up, mild symptom recurrence was noted (NPRS 2/10; WOMAC 11/100).

Conclusion

This case highlights the concept of precision regenerative therapy in OA management and underscores the critical role of subchondral bone in the disease's pathophysiology.

Keywords: Severe-Osteoarthritis; Bone-marrow-lesions; Intraosseous-PRP