

Paper #20

Osteochondral Lesions of the Femoral Condyles: Are the Results of the One-Step Repair Technique Still Satisfactory at Longterm?

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Summary:

osteochondral lesions of femoral condyle of the knee treated with Bone marrow derived cells

Abstract:

Introduction

Ideal treatment of osteochondral lesions of the knee (OLK) is still a matter of debate. Bone marrow derived cells (BMDC) transplantation, now widely used in cartilage repair of both ankle and knee joint, was proposed few years ago as a one step solution capable to overcome the drawbacks of previous techniques. The aim of this study is to investigate the validity of the "one-step" technique in OLK repair over time and to present the results of a series of 20 patients consecutively treated at long term follow-up (mean 101±14.6 months).

Methods

20 patients affected by OLK were treated by "One-Step" BMDC transplantation. 14 cases were affected by osteochondral lesion of the medial femoral condyle while 4 of the lateral. 2 patients had lesions both in medial and lateral condyles. Mean lesion size was 3.1 cm² grade III or IV of the ICRS classification. The concentrated bone marrow-derived cells were harvested from the iliac crest, loaded on a hyaluronic acid scaffold with platelet-gel and arthroscopically implanted in the same surgical session. All the patients were evaluated preoperatively with the subjective IKDC and KOOS scores and at different established follow-ups. MRI evaluation was performed preoperatively on all the patients, at 12-month and at final follow-up.

Results

Mean preoperative subjective IKDC and KOOS scores were 40.7 ± 11.0 and 44 ± 10.9 respectively. The IKDC and KOOS score improved at 12 months to 77.4 ± 11.4 and 79.3 ± 10.6 and at 24 months were 80.9 ± 9.3 and 85.6 ± 9.5 respectively (p<0.005). At final follow-up of 101 ± 14.6 months IKDC and KOOS scores were 85.5 ± 6.0 and 89.3 ± 6.0 respectively.

MRI analysis with the Mocart score showed good filling of the lesion, tissue partially dishomogenous and reduced subchondral edema.

Conclusion

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The one-step technique was able to provide good clinical and MRI results at long term follow-up with no deterioration of the score overtime. The number of cases treated is still limited, nevertheless the results are satisfying in high percentage under clinical and imaging aspects. One-step technique demonstrated to be a good and reliable option for OLK, able to overcome the major drawbacks of previous techniques with comparable results. Larger case series is necessary to confirm the validity of the procedure over time.