

Osteochondral Autograft Transplantation for Osteochondritis Dissecans of the Capitellum: Comparison of Clinical Results Between Central Lesion and Lateral Lesion

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Summary:

OAT for unstable OCD patients provides a beneficial ROM and clinical outcome, and facilitate a return to active sports. But, postoperative extension and postoperative clinical score are statistically significant difference between lateral lesion and central lesion.

Abstract:

Background:

Osteochondral autograft transplantation (OAT), or mosaicplasty, is a recently developed technique. Satisfactory results for unstable lesion of the osteochondritis dissecans (OCD) of capitellum have been reported from clinical studies showing that the transplanted cartilage retains its hyaline characteristics. However, outcomes of the OAT for the lateral lesion are still not clear.

Objectives:

The purpose of this study is to compare the clinical outcomes of the OAT for unstable OCD between the lateral lesion and the central lesion.

Methods:

Between 2003 and 2014, the medical records, radiographic records and magnetic resonance imaging (MRI) findings for total of 103 juvenile patients underwent mosaicplasty for symptomatic OCD of capitellum by a single surgeon were retrospectively reviewed. A final analytic sample were 93 patients. 49 patients were central lesion and 44 patients were lateral lesion. Of these 93 patients (93 elbows), 92 were boys and the other was a girl. The mean age at operation was 13.2 years (11 to 16). The mean follow-up period was 43.0 months. Follow-up assessment included ROM of elbow, JOA score and Timmerman and Andrews score (T&A), and return to sports.

Results:

In central lesion group, mean elbow extension improved significantly from -6.2° to 2.0° , and mean flexion improved significantly from 132.9° to 138.7° ($P<.001$ for both). The mean JOA score improved significantly from 61.6 to 98.6, and the Timmerman and Andrews score improved significantly from 140.1 to 193.5 ($P<.001$ for both).

In lateral lesion group, mean elbow extension improved significantly from -8.9° to -2.7° ($P=.016$), and mean flexion improved significantly from 130.3° to 135.6° ($P=.006$). The mean JOA score improved significantly from 57.5 to 94.5, and the Timmerman and Andrews score improved significantly from 133.4 to 184.9 ($P<.001$ for both).

Postoperative extension ($P<.001$) and postoperative T&A score ($P=.006$) and postoperative JOA score ($P=.013$) were statistically significant difference between two groups.

Return to sports is 100% in central lesion group and 89% in lateral lesion group. There is no significant difference ($P=0.08$).

Conclusion:

This study demonstrates that OAT for unstable OCD patients provides a beneficial ROM and clinical outcome, and facilitate a return to active sports. But, postoperative extension and postoperative clinical score are statistically

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significant difference between two groups. Further investing was needed about the risk factor of poor outcome, especially in lateral lesion case.