

Mid-Term Results of Biological Fixation With Autogenous Osteochondral Plugs For Osteochondritis Dissecans Lesion of the Knee

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Summary:

Biological fixation of unstable OCD lesions with osteochondral autografts provided reliable mid-term clinical outcome. Age but not preoperative osteochondral condition at the time of surgery may influence knee related QOL at final follow up.

Abstract:

Background:

Excellent short-term clinical outcomes of case series with the surgical procedure using osteochondral plugs for fixation of the unstable osteochondritis dissecans (OCD) fragments of the knee have been reported. The purpose of this study was to evaluate the mid-term clinical results of the fixation with autogenous osteochondral plugs for OCD lesion of the knee.

Materials & Methods:

Twenty-one knees (20 patients; mean age, 15.3 years) with unstable OCD lesion were treated with fixation with autogenous osteochondral plugs arthroscopically. The mean lesion size was 278 mm². Osteochondral dissecans lesions were located on the medial femoral condyle in 17 knees and on the lateral femoral condyle in 4 knees. The International Cartilage Repair Society (ICRS) classification in arthroscopic findings was grade II in 5 knees, grade III in 13 knees, and grade IV in 3 knees. All patients were evaluated with the Lysholm score and the Knee injury and Osteoarthritis Outcome Score (KOOS) with a mean follow-up of 8.1 years (range, 5-12 years).

Results:
Lysholm scores were significantly increased (93.8 ± 2.5 in ICRS II, 95.5 ± 6.1 in ICRS III, 95.0 ± 5.0 in ICRS IV) at the final follow-up. There was no difference among preoperative ICRS classifications. The KOOS at final follow up were 95.6 ± 8.5 for pain, 92.6 ± 17 for symptoms, 98.5 ± 3.6 for activities of daily living, 93.5 ± 13.4 for sports, and 90.4 ± 14.8 for knee related quality of life (QOL). Multiple regression analysis revealed that age at the time of surgery was significantly associated with knee related QOL ($\beta = -0.83$, $p = 0.027$). Although one knee required additional surgery to fix the fragment for partial detachment 2 years after primary surgery (revision rate: 4.8 %), all OCD lesions were healed. No complications arising from the donor site area were observed.

Conclusion:

Biological fixation of unstable OCD lesions with osteochondral autografts provided reliable mid-term clinical outcome. Age but not preoperative osteochondral condition at the time of surgery may influence knee related QOL at final follow up.