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Accelerated rehabilitation following fresh osteochondral allograft (FOCA) transplant surgery is equally safe and effective compared to traditional protocols

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Abstract

Purpose:

To compare the safety/efficacy of unrestricted weight-bearing with restricted weight-bearing after fresh osteochondral allograft (FOCA) transplantation surgery in the knee. Currently, various protocols exist related to weight-bearing after FOCA surgery, with the historical precedent and majority employing restrictions such as toe-touch weight-bearing (TTWB) for 6-weeks. We hypothesized that an unrestricted immediate weight-bearing as tolerated (WBAT) protocol (test group) is non-inferior to traditional restricted TTWB protocols (control group).

Methods:

Seventy-two patients (each with minimum 1-year follow-up and no major concomitant surgeries) were identified using the MOCA multicenter database (OHSU/Rush): 36 patients (18F, 18M) in the control group were compared to 36 patients (18F, 18M) in the test group. Paired matching of cohorts was conducted based on age, sex, graft size, and baseline IKDC/KOOS scores. “Failure” was broadly defined as needing revision surgery or having reduced scores in >3 PRO metrics. We compared score changes from baseline to determine clinical improvement. Multiple regression was used to control for confounders. Power analysis was conducted to ensure sufficient power to detect minimal clinically important differences (MCIDs) in outcomes between cohorts.

Results:

Mean follow-up was 2-years. Both groups showed significant improvements in mean PRO score changes from baseline across all metrics. The control group did not have significantly greater changes in IKDC/KOOS scores compared to the test group. There was sufficient power to detect MCIDs in IKDC and KOOS Pain, Sport/Recreation, and ADL between cohorts. The control group had six cases of “failure” and the test group had four. Regression analysis showed that rehabilitation protocol was not a significant predictor of score change when controlling for other factors.

Conclusion:

Results indicate that unrestricted rehabilitation is non-inferior to restricted rehabilitation after FOCA transplantation surgery. This finding has potentially important implications, as an equally safe and effective approach may offer a less cumbersome and more convenient surgical experience for patients.