

Is Bigger Always Better? The Influence of Quadruple Hamstring Autograft Size On Outcomes Following Anterior Cruciate Ligament Reconstructive Surgery

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Summary:

ACL grafts of smaller diameters (<7.5mm) do not result in inferior outcomes. This evidence may reduce the need for graft abandonment and/or the need to switch to bone-patella-tendon-bone autografts or allografts

Abstract:

BACKGROUND

Size mismatch between the native anterior cruciate ligament (ACL) and quadruple hamstring autograft is of concern to some surgeons. This may lead to abandonment of the harvested hamstring grafts of smaller diameters. We postulated the null hypotheses that graft diameter size (in this study, represented by the femoral tunnel size) would not influence outcome following ACL reconstructive surgery.

METHODS

165 patients with a minimum follow-up of 1 year post surgery were categorised into 2 groups: femoral tunnel diameter <7.5mm (range 6.0 – 7.5) and = 7.5mm (range 7.5 – 11). Primary outcome was the number of patients requiring revision surgery. Secondary outcome measures included patient satisfaction, mean reduction in Tegner activity level and functional improvement via Lysholm and Lower Extremity Functional Score (LEFS) grading.

RESULTS

There were 81 and 84 patients in the <7.5mm and =7.5mm groups respectively. The mean Tegner reduction in the <7.5mm group was 1.5 compared to 1.2 in the =7.5mm group. Mean Lysholm scores at a minimum of 1 year was 82.4 and 82.3 with the mean LEFS score of 71 and 70.6 for both groups respectively. There were 6 revisions in the first group and 5 revisions in the second. There were no significant differences in primary (revision rate) and secondary outcome measures between our 2 groups.

CONCLUSION

ACL grafts of smaller diameters (<7.5mm) do not result in inferior outcomes. This evidence may reduce the need for graft abandonment and/or the need to switch to bone-patella-tendon-bone autografts or allografts.