Posterior Cruciate Ligament Reconstruction Using an All-Inside Technique With and Without Independent Suture Tape Reinforcement

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INTRODUCTION:

Biomechanical studies support the use of suture tape reinforcement for limiting graft elongation and increase strength in knee ligament reconstructions. To our knowledge, no clinical data is available for comparing outcomes after posterior cruciate ligament reconstruction with and without suture tape reinforcement. Thus, the purpose of this study was to compare posterior cruciate ligament (PCL) laxity, complication and reoperation rates and patient-reported outcomes (PROs) after all-inside, single bundle posterior cruciate ligament reconstruction (PCLR) with or without independent suture tape reinforcement at minimum 2-year follow-up.

METHODS:

A retrospective cohort study of consecutive patients who underwent primary, all-inside allograft single-bundle PCLR with and without independent suture tape reinforcement was performed at a single academic institution from 2012 to 2019. Medical records were reviewed for demographic characteristics, additional injuries, and concomitant procedures. PRO scores (including the International Knee Documentation Committee (IKDC), the Tegner activity and Lysholm scores), bilateral comparison kneeling radiographs and physical exam findings were collected at a minimum of 2 years postoperatively.

RESULTS:

50 patients, including 19 (30.6 ± 2.9 years) with suture tape reinforcement (suture tape group) and 31 (26.2 ± 1.6 years) without suture tape reinforcement (control group) were identified. One PCLR graft in the suture tape group failed. Posterior drawer examination revealed grade 1+ laxity in 4/19 (21%) of the suture tape cohort vs 6/31 (19%) of the control cohort (p>.999). Bilateral kneeling radiographs showed no side-to-side difference (SSD) between the two groups: 1.9 ± 0.4 mm in suture tape group vs 2.6 ± 0.6 mm in control group (p=.360). There were no statistically significant differences in postoperative IKDC (79.3 and 79.6, p=.779), Lysholm (87.5 and 84.3, p=.828) or Tegner activity scores (5.6 and 5.7, p=.562).

DISCUSSION AND CONCLUSION:

All-inside single bundle PCL reconstruction with and without independent suture tape reinforcement demonstrated low rates of graft failure, complications, and reoperations with satisfactory PROs at minimum 2-year follow-up. Radiographic posterior tibial translation was comparable between the two groups.