Clinical Outcomes of All-Soft Tissue Quadriceps Tendon Autograft in Anterior Cruciate Ligament Reconstruction

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**Summary:** This study aims to examine prospectively collected intermediate-term clinical outcome data following primary ACL reconstruction and revision anterior cruciate ligament (ACL) reconstruction using an all-soft tissue quadriceps tendon (QT) autograft.
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**Methods**

**Study Design**

- 357 patients with a mean age of $20.1 \pm 6.0$ years undergoing primary ACL reconstruction with an all-soft tissue QT autograft were prospectively followed with an average follow up of $2.3 \pm 0.9$ years.

- Additionally, 62 patients undergoing revision ACL reconstruction with an all soft tissue QT autograft after failed primary repair were also included in the study (mean age=24.2 $\pm$ 1.1 years, average follow up=1.7 $\pm$ 0.2 years).

- The senior author performed all surgeries, utilizing a minimally invasive graft harvest technique and suspensory fixation.
Methods: assessment

• Subjective assessment of knee function was obtained using pre-operative and post-operative IKDC scores.
• Postoperative KT-1000 arthrometer and isokinetic strength testing measurements were collected at regular intervals.
• The incidence of complication rates including graft harvest site hematoma, postoperative loss of knee extension, and graft failure were recorded.
Results: Primary Reconstruction Cases

- The preoperative mean IKDC score for the primary ACL reconstruction procedures was 44.1 ± 15.5, and postoperative mean IKDC score was 84.4 ± 14.8, (p<0.0001).

- The percentage of patients with ± 3 mm side-to-side difference on KT-1000 arthrometer testing at 6-weeks, 3-months, and 6-months was found to be 99%, 98%, and 95%, respectively.

- Isokinetic strength testing at 6 months post-operatively showed the mean extension torque at 60 degrees/s and 180 degrees/s was 72.6% and 73.0% respectively.

- These values increased at 1 year to 82.5% (p=0.002) and 84.2% (p=0.07).

- Graft harvest site hematoma developed in 10 patients (2.8%) and postoperative loss of knee extension occurred in 30 (8.4%).

- Graft failure requiring revision occurred in 15 (4.2%) patients.
Results: revision cases

- Preoperative mean IKDC score was 52.8 ± 2.2, and postoperative mean IKDC score was 77.3 ± 3.6 (p<0.0001).
- The mean KT-1000 arthrometer testing scores at 6-weeks, 3-months, and 6-months were 1.2 ± 0.3, 1.4 ± 0.3, and 1.5 ± 0.3, respectively.
- Graft harvest site hematoma developed in three patients (4.8%) and postoperative loss of knee extension occurred in one patient (1.6%).
- Graft failure requiring revision occurred in three patients (4.8%).
Conclusions: Main Take Away Points

• ACL reconstruction and revision with an all-soft tissue QT autograft using a minimally invasive harvest technique and suspensory fixation has acceptable short and intermediate-term clinical outcomes.

• The results of this study support the use of all-soft tissue QT autograft in ACL reconstruction.
References


