
Second-Look Arthroscopy after ACL reconstruction: A comparison of Patellar Tendon and Hamstring Tendon Autograft

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Introduction

To evaluate the healing status of reconstructed anterior cruciate ligament (ACL) grafts and to compare the outcome of ACL reconstruction using patellar tendon autograft versus hamstring autograft through second-look arthroscopy.

Material and Methods

We analyzed 208 patients (209 knees) by second-look arthroscopy among 716 knees which underwent ACL reconstruction from March 1997 to September 2003. None of the patients complained subjective instability of the index knee. Second-look arthroscopy was conducted on average 21.2 months (9 to 70 months) after reconstruction. Patellar tendon autograft was used in 80 knees, and hamstring tendon autograft in 129 knees. The second-look arthroscopy focused on evaluation of graft tension and synovial coverage which was assessed by degree of displacement upon probing and visual analysis. With these findings, we compared patellar and hamstring tendon groups. Also the improvements in Lysholm knee scores and KT-2000 arthrometer results were recorded to compare both groups. Then we analyzed correlation between second-look arthroscopic findings and clinical results.

Result

In clinical examination, the average maximum-manual KT-2000 arthrometer side-to-side difference was 1.22 (\pm 0.65) mm in patellar tendon group, and 1.12 (\pm 0.61) mm in hamstring tendon group. The Lysholm knee scores of patellar tendon group was average 93.1 (\pm 4.41), which improved 21.4 points and hamstring tendon group was 94.6 (\pm 4.80), which improved 24.3 points from preoperative scores. Although no statistically significant difference was found in Lysholm knee scores and KT-2000 arthrometer results between 2 groups, hamstring tendon group tended to show better results in terms of both Lysholm knee scores and KT-2000 arthrometer results ($p > 0.05$). Arthroscopically, a total of 181 grafts (87%) showed normal tension and 28 (13%) was lax. The synovial coverage was good in 145 knees (70%), half in 55 (26%), and pale in 9 (4%). The patellar tendon group showed normal tension in 65 knees (81%), and lax tension in 15 (19%). The hamstring tendon group showed normal tension in 116 knees (90%), and lax tension in 13 (10%). In patellar tendon group, synovial coverage was good in 47 knees (59%), half in 26 (32%), and pale in 7 (9%), whereas hamstring tendon group was good in 98 knees (76%), half in 29 (22%), and pale in 2 (2%). The synovial coverage was superior in hamstring tendon group ($p < 0.05$). Although there was no statistical significance, the hamstring tendon group showed superior graft tension compared to patellar tendon group ($p > 0.05$). The patients with lax grafts showed statistically larger displacement in KT-2000 arthrometer ($p < 0.05$), but there was no correlation between synovial coverage and KT-2000 arthrometer results. Also, there was no correlation among tension, synovial coverage, and Lysholm knee scores.

Conclusion

In addition to clinical results, the second-look arthroscopic evaluation showed superior results in hamstring tendon group compared to patellar tendon group. Second-look arthroscopy after ACL reconstruction is indispensable for thorough evaluation of the actual condition of the transplanted ACL graft which is evaluated clinically successful.

Key word: ACL reconstruction, Second look arthroscopy, Patellar tendon autograft, Hamstring autograft