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Brace or No Brace After ACL-Graft? Four-Year Results of a Prospective Clinical Trial

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Summary:
In a prospective randomized trial with 52 patients using patellar tendon autograft for ACL reconstruction, divided into two equal groups and treated with or without stabilizing knee brace for 6 weeks postoperatively was shown that the aftercare with a brace brings no advantage in IKDC and KT 1000 results in comparison to the treatment without brace in the 4 year follow-up.

Abstract:
Question:
Can subjective and objective results after anterior cruciate ligament reconstruction using patellar tendon autografts be influenced by the postoperative use or non-use of a stabilizing knee brace?

Methods:
In a prospective randomized study, a total of 64 patients were divided into two equal groups and treated with or without stabilizing knee brace for 6 weeks postoperatively. A follow-up took place after four years. Evaluated were IKDC 2000, and the KT1000 measurement, a visual analogue pain scale (VAS 0 - 10) and an x-ray examination to assess osteoarthritic changes and tunnel widening. For calculation the t-test for independent and paired samples and the Pearson chi-square test was used. Analyzes with a p-value <0.05 were considered statistically significant. The difference in the total score of the IKDC subjective represents the primary endpoint. A power calculation was performed.

Results:
52 of originally 64 patients (follow-up 81%) were reexamined four years postoperatively. The results of the IKDC 2000 subjective (90.5±8,9 Brace Group, 93.2±6.1 No Brace Group), objective (Brace Group: A: 30%, B: 56%, C: 16%, No Brace Group: A: 32%, B: 48%, C: 20%) and instrumental measurement of the anteroposterior laxity with the KT1000 (Brace Group: 0.6 ±2.4 mm, No Brace Group 1.8 ±3.4 mm) showed no significant differences in the clinical outcome of the patients of both groups four years postoperative. The single-leg hop test resulted in the comparison between both groups in significantly better results (p=0.047) for the No Brace Group (95,8% (No Brace) / 76% (Brace) =90% jump distance in comparison to the contralateral side). The VAS assessment of the No Brace group was significantly better (p=0.015) with 1.0 ± 1.2 versus 1.9 ± 1.4 at physical stress. There were no differences in osteoarthritic changes and tunnel widening.

Conclusion:
The post-operative treatment after ACL replacement with a knee stabilizing brace shows no significant advantage in comparison to the treatment without a brace at the four year follow-up, so that the efficiency of this treatment should be reconsidered.