

Long-term Course in Adolescents after Anterior Cruciate Ligament Reconstruction (ACL)

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Objectives: The risk for further intra-articular damage associated with conservative treatment or delayed ACL reconstruction must be considered against the risk for growth disturbance with early reconstruction and transphyseal drilling. Long-term follow-ups after surgical treatment of ACL injuries in children are rare. The aims of the present study were to evaluate the results 10-20 years after ACL reconstruction in terms of the presence of osteoarthritis, clinical assessments and health-related quality of life in patients who were adolescents at the time of surgery.

Methods: 32 children, aged 12-16 years (11 boys; 21 girls), with symptomatic unilateral ACL rupture, underwent reconstruction using bone-patellar bone-tendon (n=10) or hamstring tendon (n=22) autograft. Twenty-nine patients (91%) underwent clinical, radiographical and health-related quality of life assessments after 10-20 years (mean 175 months).

Results: The reconstructed knee had significantly more osteoarthritic changes compared to the non-involved contralateral knee. Preoperatively the Tegner activity level was 4 (2-8) and the Lysholm knee score was 75 (50-90) points. At follow-up the corresponding values were 4 (1-7) and 84 (34-100) points, (p=n.s; preop v follow-up). The one-leg-hop test was 84% (0-105) preoperatively and 93% (53-126) at follow-up (p=0.003). At follow-up muscle strength measurements displayed more than 90 % of the non-involved leg in both extension and flexion. The knee laxity measurement was significantly less at follow-up than preoperatively (p=0.001). The SF-36 revealed scores comparable to healthy controls (fig. 1). The EQ 5D was 0.9. The KOOS values were lower in all dimensions compared to an aged matched healthy controls.

Conclusion: In the long term, patients who were adolescents at the time of ACL reconstruction reveal significantly more radiographically visible osteoarthritic changes in their operated knee than in their non-involved contralateral knee. Clinical outcomes and health-related quality of life are comparable to healthy controls.

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