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Higher Risk of Rupture for the Contralateral Anterior Cruciate Ligament in Comparison with the Affected Knee in a Series of 244 Patients with a Long-Term Follow-Up Following Anterior Cruciate Ligament Reconstruction

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Summary:

This retrospective study showed that in a cohort of homogeneous patients by ACL reconstruction technique there is a higher risk of contralateral ACL injury than graft failure, especially in young and active patients.

Abstract:

Introduction

Anterior cruciate ligament (ACL) reconstruction is a well established procedure with high success rates. The literature shows that in the short-medium term there is an high risk of rupture of the contralateral ACL, especially in young athletes. The aim of this study was to investigate the failure rate of ACL reconstruction and the injury to contralateral ACL, identifying demographic predictors in a single-center population of patients treated with the same surgical technique.

Methods

All patients operated from 2007 to 2008 of ACL reconstruction with hamstring tendons and single-bundle technique and with contralateral knee without previous surgical interventions were surveyed collecting informations regarding postoperative complications or reoperations of the ipsilateral knee and the ACL reconstruction in the contralateral knee. Age, sex, level of pre-operative sport activity and smoke were evaluated as possible predictors of ipsi or contralateral ACL reconstruction.

Results

Overall, 244 patients were included in the study. The mean age was 30 years, with 12% of patients <18 years old; moreover, 76% were male, 70% had a pre-injury Tegner activity >5 and 31% were smoker at time of injury. The overall rate of patients that underwent revision ACL reconstruction during the considered follow-up was 3.3%, with no significant effects of patients characteristics. Contralateral ACL reconstruction was performed in 7.8% of patients. Survivorship curves were similar until the 2-years, but after 2 years the survival of contralateral ACL was significantly lower ($p=0.0297$). Patients with an age <18 years ($OR=2.7$, $p=0.0110$) and pre-op Tegner Level >5 ($OR=10.5$, $p=0.0201$)

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had an higher risk of experiencing a second ACL reconstruction. Specifically 24.1% of patients <18 years underwent ipsilateral revision or contralateral reconstruction during the considered follow-up ($p=0.0059$).

Discussion And Conclusion

This retrospective study showed that in a cohort of homogeneous patients by ACL reconstruction technique there is a higher risk of contralateral ACL injury than graft failure, especially in young and active patients. Moreover, 1 out of 4 patients with age at surgery <18 is likely to experience ipsilateral ACL revision or contralateral ACL reconstruction during a 10-year follow-up period. Therefore further studies are needed to identify modifiable risk factors and optimize rehabilitation and prevention of further ACL injuries