ACL Revision Surgery with Autografts and Allografts: A Comparative Study

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Introduction

Anterior cruciate ligament (ACL) reconstruction is one of the most common surgical procedures in orthopedics [1], and the number of ACL revision surgeries is increasing concomitantly [2]. ACL revision surgery is more technically demanding and final results are less satisfactory than primary surgeries [2]. In the ACL revision surgery both autografts or allograft can be used [3]. The choice is related to the surgeon's experience and donor site morbidity. The autografts more commonly used are bone-patellar tendon-bone (BPTB) or hamstrings. Considering the primary ACL reconstruction, they have shown satisfactory strength and incorporation [4], and better results compared to the allograft, but there is insufficient data about the results of revision ACL surgery with the use of allografts. However, in ACL revision cases, donor site morbidity may be a problem, mainly in second or third revisions. The purpose of this study is to evaluate the results of ACL surgery comparing the results of cases in which autografts or allografts have been used.

Methods

Patients submitted to ACL revision surgery were retrospectively evaluated. All patients had the diagnosis of ACL reconstruction failure confirmed by clinical examination and MRI assessment. The protocol was approved by the institutional IRB. The autografts were frozen, non-irradiated, following the standards of the American Association of Tissue Banks. The final outcome was the presence or absence of the pivot-shift test. We compared the results using the Fisher exact test.

Results

Fourteen patients were included, with average follow-up of 19.7 months. Nine patients were male (six in the autograft group and three in the allograft group). Autografts were used in eight cases and allografts were used in six cases. Average age was 24.8 years old (19.3y.o. in the autografts group and 29y.o. in the allograft group). Considering the six cases in which allograft have been used, there is insufficient data about the results of revision ACL surgery with the use of allografts. However, in ACL revision cases, donor site morbidity may be a problem, mainly in second or third revisions. The purpose of this study is to evaluate the results of ACL surgery comparing the results of cases in which autografts or allografts have been used.

Conclusion

Post-operative results of ACL revision surgery with autografts were better in terms of knee stability than the results with allograft.
allograft. In the active, young patient, allograft showed a high rate of persistent instability. The use of autografts showed to be a better option in these cases.

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