

Abstract

Aims

Prospective, randomized, non-blinded study, on the effects of use of platelet-rich fibrin (PRF) in anterior cruciate ligament reconstruction surgery.

Methods

Initially, 40 patients between 2012 and 2014 were enrolled in the study and randomized for the treatment with (n=20, intervention group) or without (n=20) the use of PRF (controls). The average age was 29.1 years at inclusion, with 12 female and 28 male patients. Vivostat® PRF was obtained from patient blood and applied onto the hamstring graft. Magnetic resonance imaging (MRI) documented healing was evaluated at 6 and 12 months. Clinical outcome parameters as well as standardized evaluation of knee laxity using the GenouRob device were collected at 12 months.

Results

Thirty-three patients completed the full follow-up (17 intervention, 16 control). In two cases, a graft tear was documented (occurred in the control group). However, there were no differences in the remodeling progress in MRI using the log-rank test ($p=0.07$). There was no difference in the return to pre-injury sport levels ($p=0.232$), Lysholm and IKDC scores ($p=0.259$ and $p=0.364$ respectively). Knee laxity measurements showed no differences between the intervention and control groups.

Discussion

Similar results we found in our study have recently been published by other world authors. It can be assumed that the use of PRF may be advantageous especially with regard to the early healing phase. The results need to be verified on a larger number of patients, the design of the study should be focused on development in the early postoperative period.

Conclusion

Our group did not show faster graft healing or faster ligamentization ACL in the group where PRF was applied perioperatively during arthroscopic reconstruction of the ACL by hamstring tendon autograft. There was no significant difference in the assessed clinical parameters.

