

## The Remnant Preserving Surgery and the Remnant Type In ACL Reconstruction

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### Summary:

A Remnant preservation in ACL reconstruction showed better results than non-preserving ACL reconstruction in KT-2000 and second look arthroscopic findings.

### Abstract:

#### INTRODUCTION

During ACL reconstruction, the remnant of the native ligament might contribute to the biological healing of the graft. However, it is still unknown that preserving remnant and its types affect the clinical results or not. The purpose of this study is to compare the remnant type and the stability after operation.

#### MATERIALS & METHODS

We conducted a retrospective study on 137 cases that underwent primary ACL single bundle reconstruction between January 1, 2009, and April 30th, 2012. We classified into 4 morphological types based on arthroscopic findings: type 2, bridging between the posterior cruciate ligament and tibia; type 4, bridging between the roof of the intercondylar notch and tibia; type 1, bridging between the medial wall of lateral femoral condyle and tibia; type 3, no substantial ACL remnants. The whole cases were classified as a preserving surgery and non-preserving surgery based on arthroscopic findings. We checked range of motion, IKDC subjective score, Lysholm score, Tegner activity score, and KT-2000 arthrometer, and second-look arthroscopic findings (evaluated as a tension, tear, synovialization)

#### RESULTS

There were 48 cases in 52 cases in type 2 (39 cases of remnant preservation), 14 cases in type 4 (3 cases of remnant preservation), type 1 (42 cases of remnant preservation), and 23 cases in type 3 (2 cases of remnant preservation). The remnant-preserving group showed better results than non-preserving group in KT-2000 arthrometer (preserving group, 1.60mm; non-preserving group 2.51mm), tension, tear, and synovialization of second look arthroscopy ( $p<0.05$ ). In type 1, remnant-preserving group showed better results than non-preserving group in tear, synovialization of second look arthroscopy ( $p<0.05$ ). In remnant-preserving group, there was no difference between type 1 and type 3. Type 1 remnant preserving group showed better results than whole non-preserving cases in KT-2000 (type 2 preserving group, 1.46mm; non-preserving cases 2.51mm), tension, tear, and synovialization of second look arthroscopy ( $p<0.05$ ). However, there was no difference between type 3 remnant preserving group and whole non-preserving cases (50 patients).

#### CONCLUSION

A Remnant preservation in ACL reconstruction showed better results than non-preserving ACL reconstruction in KT-2000 and second look arthroscopic findings. If the remnant was bridged between posterior cruciate ligament and tibia, the remnant preserving surgery showed better results in KT-2000 and second look arthroscopic finding.