

## Paper #9

# Functional and Radiological Outcome of Arthroscopic Single-Bundle vs. Double-Bundle PCL Reconstruction Using Hamstring Autograft in Isolated Grade 3 PCL Tear: A Prospective Randomized Control Trial

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### Summary:

Comparison of functional and radiological outcome of arthroscopic single bundle versus double bundle PCL reconstruction using hamstring autograft in isolated grade 3 PCL tears with a minimum follow up of 2 years.

### Abstract:

### Purpose

Posterior cruciate ligament (PCL) consisting of the anterolateral and posteromedial bundle is the strongest ligament of the knee and is the major restraint to posterior translation in the normal knee. The anterolateral bundle is larger and has greater linear stiffness, hence PCL reconstructions have focused on anterolateral bundle. Our study was conducted to compare the functional and radiological outcome of single and double bundle PCL reconstruction using hamstring autograft.

### Materials And Methods

All patients diagnosed with isolated grade 3 PCL tears were randomly allocated into single or double bundle group by a computerised random number generator. All reconstructions were performed using bilateral semitendinosus grafts. Functional and radiological assessment was done pre operatively and post operatively at 6 months, 12 months and yearly for a minimum of 2 years.

### Results

A total of 42 patients were included in the study (21 in each group). Functional assessment was done using International Knee Documentation Committee (IKDC) and Lysholm knee scoring system. . There was a significant improvement ( $p < 0.05$ ) in the IKDC scores from 40.2 (31-50) and 41.2 (32-50) to 89.4 (79-96) and 91.05 (86-99) in the single and double bundle groups respectively. The Lysholm scores improved from 50.8 (44-70) and 51 (43-70) to 89.25 (80-95) and 91.5 (85-99) in both the groups respectively. However there was no statistically significant difference between the two groups. Radiologically also there was significant improvement in laxity in both groups post operatively measured using stress radiographs but no significant difference was noted amongst the two groups.

### Conclusion

Though there is a significant improvement in the functional and radiological outcome with both single and double bundle PCL reconstruction, there is no significant difference between the two groups.

Key Words – Posterior cruciate ligament, Single Bundle, Double bundle.