

Comparison of Patient-Reported Outcome Measures between Bicruciate-Stabilized and Posterior-Stabilized Total Knee Arthroplasty in the Same Patients: A Randomized Controlled Trial

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INTRODUCTION: The purpose of this study was to compare not only the radiological results, but also postoperative patient-reported outcomes measures (PROMs), of Bicruciate stabilized (BCS) and posterior stabilized (PS) total knee arthroplasty (TKA) in the same patients.

METHODS: A prospective, randomized controlled trial was performed in 48 patients who received bilateral TKAs. One knee was randomly assigned to receive a BCS TKA, and the other knee was scheduled for a PS TKA from the same company knee system. The anteroposterior (AP) stability was evaluated using 20° flexion radiographs with anterior and 90° flexion radiographs with posterior drawer stress at 1 year postoperatively. Postoperative PROMs were compared using Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) score and preference of operation side. Forgotten joint score (FJS) was also evaluated in both groups.

RESULTS: There was no significant difference with regard to the demographics and preoperative measures. No Significant difference in static AP laxity was seen (8.2mm in the BCS group vs. 8.7mm in the PS group, $p > 0.05$). There were no significant differences in the all WOMAC subscores between the two groups at preoperatively and 1 year postoperatively (all $p > 0.05$). There was no difference of preference ($p > 0.05$) and FJS (53.5 in the BCS group vs. 50.4 in the PS group, $p > 0.05$) between BCS and PS group.

DISCUSSION AND CONCLUSION: Despite theoretical advantages of BCS prosthesis, there was no significant differences in radiological outcomes and PROMs including preference and WOMAC scores between groups with UC and PS inserts at 1 year postoperatively.