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Long-Term Follow-Up of Dynamic Balance, Pain and Functional Performance in Cruciate Retaining, Posterior Stabilized Total Knee Arthroplasty

Authors : Ahmed R. Z. Baghdadi, Mona H. Gamal Eldein

Abstract : Background: With the perceived pain and poor function experienced following knee arthroplasty, patients usually feel unsatisfied. Yet, a controversy still persists on the appropriate operative technique that doesn't affect proprioception much. Purpose: This study compared the effects of Cruciate Retaining (CR) and Posterior Stabilized (PS) total knee arthroplasty (TKA on dynamic balance, pain and functional performance following rehabilitation. Methods: Thirty patients with CRTKA (group I), thirty with PSTKA (group II) and fifteen indicated for arthroplasty but weren't operated on yet (group III) participated in the study. The mean age was 54.53±3.44, 55.13±3.48 and 55.33±2.32 years and BMI 35.7±3.03, 35.7±1.99 and 35.73±1.03 kg/m2 for group I, II, and III respectively. The Berg Balance Scale (BBS), WOMAC pain subscale and Timed-Up-and-Go (TUG) and Stair-Climbing (SC) tests were used for assessment. Assessments were conducted four weeks pre- and post-operatively, three, six and twelve months post-operatively with the control group being assessed at the same time intervals. The post-operative rehabilitation involved hospitalization (1st week), home-based (2nd-4th weeks), and outpatient clinic (5th-12th weeks) programs, follow-up to all groups for twelve months. Results: The Mixed design MANOVA revealed that group I had significantly lower pain scores and SC time compared with group II three, six and twelve months post-operatively. Moreover, the BBS scores increased significantly and the pain scores and TUG and SC time decreased significantly six months post-operatively compared with four weeks pre- and post-operatively and three months post-operatively in group I and II with the opposite being true four weeks post-operatively. But no significant differences in BBS scores, pain scores and TUG and SC time between six and twelve months post-operatively in group I and II. Interpretation/Conclusion: CRTKA is preferable to PSTKA, possibly due to the preserved human proprioceptors in the un-excised PCL.

Keywords : dynamic balance, functional performance, knee arthroplasty, long-term
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