

group. (#2) From September 1st 2012 until 50 patients had started on Morphine IR, constituting the Morphine group. The two periods were similar with respect to organisation of staff, surgical and medical procedures; only the pain management regimes differed.

Results: The two groups' demographics and baseline characteristics were comparable (Table). The patients in the Oxycodone group had a significantly shorter hospitalization (3.6 days) period compared to the patients in the Morphine group (5.3; mean difference 1.7 days [95% CI 0.7 to 2.7]; $P=0.001$; Table). Further, the proportion of patients hospitalized more than 3 days were 62% (Risk Difference: 22%; 95%CI 3 to 41; $P=0.024$) lower in the Oxycodone group (36% vs. 58%). 16% of the patients in the Oxycodone group switched pain management regime, whereas 48% of the patients in the Morphine group switched to a different pain management regime due to intolerance or insufficient efficacy (Risk Difference: 32% [95%CI 15 to 49]; $P=0.0003$). While the analgesic effect of the two pain management regimes was similar between groups during the second day, the Oxycodone group had a statistically significant smaller maximum pain intensity during the third day of hospitalization (mean difference: 0.9 cm [95%CI 0.2 to 1.6]; $P=0.014$).

Conclusions: After TKR, postoperative pain management regime using Oxycodone CR when needed, was associated with a shorter hospitalization period, seemingly caused by superior pain relief on the third day of hospitalization (leading to discharge) and a better tolerance compared to a Morphine IR regime. Optimized postoperative pain management using Oxycodone CR may help achieving the fast track goals of 2-3 hospitalization days following TKR.

577

CLINICALLY IMPORTANT BODY WEIGHT GAIN FOLLOWING KNEE ARTHROPLASTY: A FIVE-YEAR COMPARATIVE COHORT STUDY

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Objective: The impact of knee arthroplasty on bodyweight has not been fully explored. Clinically important weight gain following knee arthroplasty would pose potentially important health risks.

Methods: We used one of the largest US-based knee arthroplasty registries and a population-based control sample from the same geographic region to determine whether knee arthroplasty increases risk of clinically important weight gain of 5% or more of baseline body weight over a 5-year postoperative period.

Results: There were 1,122 TKAs, in 917 patients, meeting criteria for inclusion in the study and a random sample of 237 persons in the population-based sample. Of the persons in the knee arthroplasty sample, 30.0% gained 5% or more of baseline body weight five years following surgery as compared to 19.7% of the control sample. The multivariable adjusted (age, sex, BMI, education, comorbidity and pre-surgical weight change) odds ratio was 1.6 (95% CI, 1.2, 2.2) in persons with knee arthroplasty as compared to the control sample. Additional arthroplasty procedures during follow-up further increased risk for weight gain (OR=2.1, 95% CI, 1.4, 3.1) relative to the control sample. Specifically among patients with knee arthroplasty, younger patients and those who lost greater amounts of weight in the 5-year pre-operative period were at greater risk for clinically important weight gain.

Conclusions: Patients who undergo knee arthroplasty are at increased risk of clinically important weight gain following surgery. The findings potentially have broad implications to multiple members of the healthcare team. Future research should develop weight loss/maintenance interventions particularly for younger patients who have lost a substantial amount of weight prior to surgery as they are most at risk for substantial postsurgical weight gain.

578

THE INFLUENCE OF DEEP KNEE FLEXION AT THE EARLY POSTOPERATIVE STAGE AND HEIGHT OF PATELLAR ON INCIDENCE OF PATELLAR CLUNK SYNDROME

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Purpose: It has been reported that posterior-stabilized total knee arthroplasty (TKA) has a high incidence of the patellar clunk syndrome.

The syndrome has previously been linked to component design, patellar tilt, and other factors. Larger intercondylar box ratio of the PFC Sigma PS has been found to lead to a higher incidence of patellar clunk syndrome due to more frequent contact between the patellar and intercondylar. The purpose of this study was to evaluate the association of patellar clunk syndrome with flexion and several other factors using the PFC Sigma PS.

Methods: One hundred and nine posterior stabilized TKAs were performed from 2009 to 2011, ninety-four of which were finally evaluated. All patients had a PFC Sigma RP. The following factors were recorded during the study and compared between those with complications of patellar clunk syndrome (PCS) and those without (NPC): age, gender, diagnosis (OA/RA), preoperative flexion, 6-week post-operative flexion, and final flexion. The study also took into account and compared both groups (PCS/NPC) on Insall-Salvati ratio, postoperative patella height, preoperative and postoperative femoral-tibial angle using x-ray. Statistical analysis of patellar clunk incidence evaluated chi-square tests or student T test, with significance at P less than .05.

Results: The study was conducted with a mean follow-up of 2.2 years (1.1-3.5) Of the ninety-four knees evaluated, patellar clunk syndrome was identified in six (7.4%). The 6-week postoperative knee flexion and postoperative low lying patellar were significantly associated with patellar clunk syndrome ($P<0.05$). Other factors showed no significant association with this syndrome.

Conclusions: In this study, patellar clunk syndrome is associated with 6-week postoperative knee flexion. It doesn't, however, show a strong association during preoperative and final postoperative stages. Furthermore, a lower patellar height leads to an increased patellar-intercondylar friction area. Patellar clunk syndrome usually occurs between the 3-month to 9-month stage post-operation. The fact that deep flexion at the 6-week postoperative period shows strong links to patellar clunk syndrome suggests that ROM exercise should be modified to take into consideration the possibility of inflammatory fibrous hyperplasia at the early stage of healing.

579

IMPROVEMENTS IN BIOMECHANICAL SYMMETRY ARE RELATED TO IMPROVED FUNCTIONAL PERFORMANCE FOLLOWING TOTAL KNEE ARTHROPLASTY

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Inter-limb asymmetry in the lower extremity is evident after unilateral total knee arthroplasty (TKA). In particular, these altered movement patterns are characterized by larger hip and knee extension moments and higher vertical ground reaction forces under the non-operated limb compared to the operated limb during a sit-to-stand (STS) task. Although greater symmetry in quadriceps strength is associated with improved biomechanical symmetry, strength only explains a small portion of the variance in symmetrical movement patterns. Previous work has also revealed that greater biomechanical symmetry during STS is correlated with better functional performance at a single time point; however no studies have evaluated whether improvements in symmetry over time are correlated with improvements in functional performance over the same time period.

Purpose: The purpose of this study was to determine if improvements in biomechanical symmetry were associated with improvements in functional performance when compared 2-3 weeks before surgery and 6-months after TKA.

Methods: Eight subjects who scheduled to undergo unilateral TKA (6 males) participated in this study. After TKA, patients received 6-8 weeks of outpatient physical therapy that included progressive strengthening and symmetry retraining. Biomechanical analysis of STS and functional testing were performed 2-3 weeks before TKA and 3 and 6 months after surgery. Biomechanical measures included symmetry ratio of peak flexion knee moment (PFKM) during rising from a chair (RFC), as well as vertical ground reaction force (VGRF) during RFC, standing and return to sit (RTS). Symmetry ratios were calculated as the operated limb divided by the non-operated limb. Functional outcomes included the six-minute walk (6MWT), stair climbing task (SCT), the timed up and go test (TUG) and the quadriceps index (QI), which was a ratio of the isometric knee extensor strength of each limb (operated/non-operated). Correlations of change scores were created between functional and biomechanical outcomes.

Results: Subjects demonstrated improved symmetry for all biomechanical variables and quadriceps strength, and subjects improved in all functional performance metrics across testing sessions (Table 1). Change