

Comparison of midterm outcomes of total knee arthroplasty with medial parapatellar versus subvastus approach

Abstract

Background: One of the most reliable scoring systems for the results of Total knee arthroplasty is the knee injury and osteoarthritis outcome score. However, in previous studies reviewing the results of knee replacement surgery using this scoring system, different approaches to skin incision and exposure of the knee joint to perform the rest of the procedure have not considered.

Aim: To compare midterm outcomes of total knee arthroplasty with medial parapatellar versus subvastus approach.

Materials and Methods: In this retrospective descriptive-analytical cross-sectional study, 300 eligible patients were selected using random sampling method. 150 of them underwent knee replacement surgery with sub-vastus approach and 150 of them underwent medial parapatellar approach. Data on the results of the operation, in the period of 6 months after surgery, based on the scale of knee injury and osteoarthritis outcome score (KOOS), which is recorded in the patients' charts was collected. Demographic characteristics of patients including age, sex, comorbidities and BMI were also collected.

Results: 149 (49.7%) and 151 (50.3%) patients were female and male, respectively. The mean of patients' age were 64.5 ± 3.5 , respectively. In the sub-vastus approach, the KOOS mean score was 79.2 ± 3.6 . In the medial parapatellar approach, the KOOS mean score was 71.5 ± 3.6 , respectively. Comparing patients in the sub-vastus approach with the parapatellar approach: The overall KOOS score was significantly higher in the sub-vastus approach ($P < 0.05$ and $t = 19.2$). The subscale score of quality of life, pain and daily activities was significantly higher in the sub-vastus approach ($p < 0.05$) the exercise subscale score was higher in the sub-vastus approach but this difference was not significant ($P < 0.06$ and $t = 2.76$). There was no significant difference between the two approaches in the symptom subscale.

Conclusion: Based on the results of the present study in Total knee arthroplasty, the sub-vastus approach is a more desirable method compared to the parapatellar medial approach in the field of surgical outcomes according to patients' reports on KOOS overall score and subscales of pain, quality of life and daily activities. In patients with concomitant rheumatic disease, it is recommended that the sub-vastus method have a relative contraindication.

Keywords: Total knee arthroplasty, Knee injury and osteoarthritis outcome score, Medial parapatellar approach, Subvastus approach.