Abstract: Continuous femoral nerve block after total knee arthroplasty was associated with reducing pain, but may increase the risk of inpatient falls. Since quadriceps muscle weakness due to nerve blocks also limited rehabilitation, a nerve block technique to preserve muscle strength should be considered to prevent inpatient falls.

Data: Background: Postoperative analgesic management in total knee arthroplasty (TKA) has been reported to be important not only in contributing to patient satisfaction and clinical outcomes, but also in reducing hospital stay and medical costs. The effectiveness of periarticular multimodal drug injection (PMDI) and femoral nerve block (FNB) in pain management after TKA has been reported. While continuous FNB can be expected to relieve pain, reduced quadriceps muscle strength due to FNB often limits a patient’s ability to participate in rehabilitation programs. The purpose of this study was to investigate the effects of different analgesic management methods on postoperative functional recovery and falls following TKA.

Methods: This retrospective cohort study included 186 patients with unilateral TKA (54 males, 132 females, age 75.1 years). Patients were divided into three groups depending on postoperative analgesic management: PMDI alone (PMDI group; n=56, 13 males, 43 females, age 74.0 years), continuous FNB with PMDI (cFNB group; n=80, 28 males, 52 females, age 75.6 years), and single-shot FNB with PMDI (sFNB group; n=50, 13 males, 37 females, age 74.0 years). The following data were extracted: gender, age, body mass index, comorbidities, side of surgery, preoperative walking ability, dose of postoperative opioid, postoperative complications, postoperative delirium, postoperative opioid requirements among the three groups. Patients in the cFNB group who showed NRS of 3 or less on the first postoperative day were included. Lateral distal femoral angle (LDFA) and medial proximal tibial angle (MPTA) were defined as medial distal slope termed ‘Distal Apex’, ‘Proximal Apex’ and ‘Valgus’. JLO thresholds were defined as >2° Varus, ≥2° Neutral and >2° Valgus. JLO thresholds were defined as >3° with a medial distal slope termed ‘Distal Apex’, ≥3° from Neutral and >5° lateral distal slope termed ‘Proximal Apex’. Differences in balance in 10°, 40° and 90° were determined using a one-way 2-tailed ANOVA test with a critical p-value of 0.05. Results: 1124 knees satisfied inclusion criteria. The highest proportion of knees (43.0%) are CPAK I with a varus JLO and Distal Apex JLO, 80.8% report a Distal Apex JLO and 49.2% report a varus JLO. Greater medial gaps are observed in varus knees (I, IV, VII) compared to neutral (II, V, VIII) and valgus knees (III, VI, IX) (p<0.05 in all cases) as well as in the Distal Apex groups (I, II, III) compared to the Neutral groups (IV, V, VI) (p<0.05 in all cases). Reliable comparisons could not be made with the Proximal Apex groups due to low frequency (<1.5%). Conclusions: Significant differences in joint balance were observed between CPAK groups; A component alignment target based solely on pre-operative boney anatomy may not be sufficient to balance the joint.

Summary: Significant differences in joint balance were observed between CPAK groups; A component alignment target based solely on pre-operative boney anatomy may not be sufficient to balance the joint.

Category: Knee - Arthroplasty

Intraoperative Low Reliability of the Tibial Anteroposterior Axis “Akagi’s Line” is Correlated with Poor Clinical Outcomes after Total Knee Arthroplasty

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All Authors:
Kohei Kagawuchi MD JAPAN
Ryoa Yamagami MD JAPAN
Kenichi Kono MD, PhD JAPAN
Tomofumi Kage MD JAPAN
Ryo Murakami MD JAPAN
Takahiro Arakawa MD JAPAN
Shuji Taketomi MD, PhD JAPAN
Christopher Plaskos PhD UNITED STATES
Edgar A Wakelin PhD UNITED STATES
Sophie Putman FRANCE
Sanjeev Gupta MD AUSTRALIA

Summary: The tibial anteroposterior axis “original Akagi’s line” defined on CT was not replicated intraoperatively and the intraoperative poor detection of Akagi’s line could be the reason for the tibial component rotational error and worse post-operative clinical outcomes in total knee arthroplasty.

Data:

Category: Knee - Arthroplasty

Variation In Pre-Operative Knee Balance As A Function Of Hip-Knee-Ankle Angle And Joint Line Obliquity In Total Knee Arthroplasty

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All Authors: