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The Effect of Intraoperative Patient Position on Anterior Tibial Translation in Anterior Cruciate

Ligament Reconstruction

Anterior cruciate ligament (ACL) reconstruction is performed to reduce joint laxity, with the hope of restoring knee stability. We hypothesized that the intraoperative patient position would affect anterior tibial translation in ACL reconstruction. The purpose of this study was to evaluate the effect of intraoperative patient position on anterior tibial translation in ACL reconstruction. Ten patients (4 male and 6 female, mean age: 26.1 ± 13.7) who had ACL reconstruction were enrolled in this study. The patients took two different intraoperative patient positions, the supine position on the operating table and the supine hanging leg position with leg holder. Subsequently, lateral x-rays were taken in each intraoperative patient position at four different knee angles. Anterior tibial translation was assessed by the mid-point displacement ratio (M ratio). The results for the M ratio with the supine position on the operating table were 64.3% at 90 degrees knee flexion, 73.2% at 90 degrees knee flexion with anterior drawer, 62.4% at 120 degrees knee flexion and 73.3% at full flexion. The results for the M ratio with the supine hanging leg position were 64.2% at 90 degrees knee flexion, 71.2% at 90 degrees knee flexion with anterior drawer, 65.3% at 120 degrees knee flexion and 67.4% at full flexion. The fully flexed knee angles with the supine position on the operating table and with the supine hanging leg position were 138.0 degrees and 121.0 degrees, respectively. Our results suggested that neither intraoperative patient position

induced anterior tibial instability. We also concluded that the supine position on the operating table, which demonstrated deeper knee flexion, might be advantageous for the far anteromedial portal technique.