Does measuring the medial gap before bone resection in total knee arthroplasty provide optimum gap adjustment and prevent bone recutting?

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Objectives: The aim of this study was to demonstrate that measuring the medial gap before bone resection during total knee arthroplasty (TKA) provides an optimum gap adjustment in varus knees.

Methods: Patients were separated into two groups, Group 1 being those whose medial joint gap was measured prior to bone resection and Group 2 comprising those who underwent conventional measured resection technique without measuring. The medial joint gap was measured with a custom-made gap measuring device up to the point that the knee was corrected and aligned along its mechanical axis. Medial joint gap distances, distal medial femoral bone cut thicknesses, amounts of tibial resection calculated, gap internal distances measured after cutting, and the thicknesses of the trial inserts were recorded. A comparison was made between the groups in terms of the number of patients requiring an additional bone cut and the distribution of insert thicknesses.

Results: Extra tibial bone resections performed in two (5.7%) patients in Group 1 and in 10 (28.6%) patients in Group 2. In Group 1, where the medial joint gap was measured, the need for an additional bone resection was statistically less. (p=0.018). In the comparison of distribution of insert size by group, the number of patients on whom an 8 mm insert had been used was significantly greater in Group 1 (p=0.024).

Conclusion: Measuring the medial joint gap prior to bone resection in total knee arthroplasty may prevent repeated bone recutting and additional bone resections. Furthermore, we can use this method to avoid the disadvantages of the measured resection technique.

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