

Summary

High tibial osteotomy changes the patella and tibial condyle position, which makes the subsequent total knee replacement technically demanding. Our aim was to develop an osteotomy, which does not considerably change the position of the tibial condyle and the position of the patella.

From 1 January 1993 to 31 December 2000, combined osteotomy [After the first osteotomy made 2 cm distally to the joint line, a bone wedge is removed based laterally. Its tip ends at the center of the proximal osteotomy (half bone wedge). The distal part of the tibia is placed into the valgus position and the half bone wedge is placed into the gap opened medially was performed on 103 knees and closing wedge osteotomy was performed on 47 consecutive knees. Eighty combined (group A) and 41 closing wedge (group B) osteotomy were studied. All knees were assessed radiologically before surgery, in the 10th postoperative week, in the 12th postoperative month and at the time of the final follow-up (in group A-66.15 months, in group B-66.61 months). We examined the change of the femorotibial angle, of the patellar height according to the method of Insall and Salvati, of the tibial slope angle according to the method of Bonnin, of the tibial condylar offset according to the method of Yoshida and of the distance between the lateral tibial plateau and the top of the fibular head. The clinical assessment was made according to the Lysholm and Gillquist score system of 100 points. Mean follow up was 54,15 months.

In group A and B, the recurrence of the varus deformity was not noted and valgus alignment did not increase in any case. In group A, the Insall-Salvati ratio remained unchanged in 65% of knees. The tibial slope angle decreased in both groups. There was correlation between the change of the tibial condylar offset and the angle of the correction in both groups. There was correlation between the change of the distance between the lateral tibial plateau and the top of the fibular head, and the angle of the correction in both groups. After combined osteotomy, the transposition of the tibial condyle and the decrease of the distance between the lateral tibial plateau and the top of the fibular head was less than after closing wedge osteotomy, although the average angle of correction was more after combined osteotomy (11.835°), than after closing wedge osteotomy (9.465°). In group A the clinical result was excellent in 44%, good in 45%, and poor in 11% of the knees.

Theoretically, the lack of the recurrence of the varus deformity, the increase of the valgus alignment and (in majority of cases) the shortening of the patellar tendon do not compromise the likelihood of successful conversion to the subsequent total knee replacement, either after combined or after closing wedge osteotomy. The combined osteotomy does not lead to considerable transposition of the tibial condyle and to considerable lateral tibial bone loss; therefore, theoretically, the combined osteotomy does not impair the subsequent total knee replacement.

