Second-Look Arthroscopic Cartilage Status Affects Intermediate-Term Outcomes after Medial Opening-Wedge High Tibial Osteotomy

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INTRODUCTION:

We sought to evaluate the clinical and arthroscopic outcomes after medial opening-wedge high tibial osteotomy (MOHTO) for medial compartmental knee osteoarthritis followed by second-look arthroscopy. The purpose of the present study was to determine the relationship between articular cartilage status and postoperative outcomes after MOHTO over an intermediate follow-up period. We hypothesized that superior articular cartilage status correlates with better outcomes.

METHODS:

We reviewed 155 patients who underwent MOHTO from January 2008 to December 2016 followed by second-look arthroscopy with a 5.3 year (2.0–11.7) mean follow up. Arthroscopic findings were assessed according to the International Cartilage Repair Society (ICRS) Cartilage Repair Assessment (CRA) grading system. Patients were divided into two groups based on the presence of normal or nearly normal quality cartilage in the medial femoral condyle: good (second-look arthroscopic) status (ICRS grade I or II, n = 70) and poor (second-look arthroscopic) status (ICRS grade III or IV, n = 85) groups at the time of second-look arthroscopy. Clinical outcomes were assessed using the International Knee Documentation Committee (IKDC) score, Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), and Short-Form 36 score.

RESULTS:

Significant improvements in all clinical outcome categories were found between the preoperative and second-look arthroscopic assessments in both groups (p < 0.001). At the latest follow up, the mean IKDC and WOMAC scores in the good status group further improved compared with those at the time of second-look arthroscopic surgery (p < 0.001). The IKDC (good status, 72.8 ± 12.5; poor status, 64.7 ± 12.1; p = 0.002) and WOMAC scores (good status, 15.7 ± 10.8; poor status, 21.8 ± 13.6; p = 0.004) significantly differed between both groups at the latest follow up. Moreover, significant correlations were observed between ICRS CRA grades and IKDC scores (negative correlation, p < 0.001) and WOMAC scores (positive correlation, p < 0.001) at the latest follow up. Good cartilage status was found more frequently in knees with the desired range of 2–6° valgus correction than in those with corrections outside this range (p = 0.019).
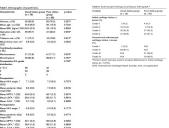
DISCUSSION AND CONCLUSION:

The principal finding of the present study was that second-look arthroscopic articular cartilage status according to the ICRS grade correlated with the postoperative outcome after MOHTO for medial compartmental knee osteoarthritis over an intermediate-term follow-up period. The clinical outcomes (increased IKDC and decreased WOMAC scores) in the good status group were more favorable than those in the poor status group at the latest follow up, and further improvement in the outcomes from the time of second-look arthroscopic surgery to the latest follow up was observed in the good status group alone, despite the relatively small clinical differences between the two groups.

Second-look arthroscopic cartilage status correlated with clinical outcomes after MOHTO at intermediate-term follow up, despite the relatively small clinical differences between the groups. This study suggests the importance of ongoing efforts to achieve better cartilage status and to establish adequate correction for the treatment of medial compartmental osteoarthritis.