Session 11- Poster 1

자가 삼면 피질골을 이용한 내측 근위 절골술의 방사선적 관찰
Tibial Slope and Patellar Height After Opening Wedge High Tibia Osteotomy Using Autologous Tricortical Iliac Bone Graft

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INTRODUCTION

Our aim was to evaluate the alteration in angle of the posterior slope of the tibia and the degree of patellar height in medial opening wedge high tibia osteotomy (HTO) using autologous tricortical iliac bone graft in 32 consecutive knees

MATERIALS AND METHODS

The indication for this procedure was medial osteoarthritis or osteonecrosis with associated varus malalignment(33 primary medial compartment osteoarthritis and 1 idiopathic osteonecrosis of medial tibial condyle). There were 23 female and 9 male patients, whose mean age at the time of surgery was 54 years(range, 42~68 years).

A diagnostic knee arthroscopy was performed. The autologous tricortical iliac crest bone was harvested by oscillating saw or osteotomy. The average ratio of anterior to posterior tricortical graft width was 0.68.

Standardised radiography was performed preoperatively and subsequently at 1 month, 3 months and 12 months after the operation.

The posterior slope of tibia was determined by the proximal tibial anatomical axis. Patellar height was measured by the Insall-Salvati and the Blackburne-Peel ratios. Two observers (KWN and DJC) measured the angle of posterior slope and patellar height.

The intra- and interobserver variability of these methods was determined before and after operation.

RESULTS

At the end of mean follow up 3 years, this procedure produced no significant change in posterior slope. Pre- and postoperative posterior slope were 8.7±3.6° and 8.2±2.8° respectively(P=0.412).

Pre- and postoperative Insall-Salvati ratios were 0.93±0.10 and 1.05±0.11, respectively (P<0.001). The Insall-Salvati ratio increased in 94% of patients, patellar ligament length was significantly increased.

The distance between the patellar and tibiofemoral joint line decreased in 82% of patients. The mean Blackburne-Peel ratio declined from 0.71±0.12 to 0.61±0.13(P<0.001). Twenty six percent of postoperative Blackburne-Peel values satisfied the radiographic criterion for patellar infera (Blackburne-Peel ratio < 0.54).

There was no clinically relevant difference in the intra- and interobserver variability of measurements either before or after HTO.

CONCLUSION

Opening wedge HTO using autologous tricortical iliac bone graft with T-plate fixation and early mobilisation prevented change in the posterior slope of tibia, lengthened the patellar ligament and elevated the tibiofemoral joint line when the mean ratio of anterior and posterior gap at the osteotomy site was around two thirds.

Key Words: Opening wedge osteotomy, Tibial slope, Autologous tricortical bone graft.