

The Relationship of TT-TG Distance after Tibial Tubercle Medialization and PFOA

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Summary:

In anteromedialization of the patella for recurrent patella dislocation, over-correction of the TT-TG distance to over 0 mm resulted in no obvious adverse effect regarding the position of the patella and signs of PFOA

Abstract:

BACKGROUND

During surgical treatment of recurrent patella dislocation, tibial tubercle medialization is an often-performed procedure. However, what TT-TG distance is most suitable after operation is unknown. Restoration to normal TT-TG distance may not be enough because of the less bony restrain resulted from trochlea dysplasia.

HYPOTHESIS

After tibial tubercle medialization, over-correction of the TT-TG distance or less than normal TT-TG distance lead to higher occurrence of patellofemoral arthritis.

STUDY DESIGN: Randomized controlled trial. Level of evidence, 2.

METHODS

120 patients with recurrent patella instability were randomized divided into 3 groups to undergo tibial tubercle anteromedialization, with the target TT-TG distance as 1-5 mm, 6-10mm and 11-15mm respectively in the three groups. MPFL reconstruction with the anterior half of the peroneous longus tendon was performed in all cases. Lateral retinaculum release was performed as indicated. The patients were followed up for a minimum of 2 years. Serial CT examination was taken at 3, 6, 12, and 24 months to evaluate the medial-lateral deviation of the patella. Signs of PFOA were detected according to the symptoms and CT image. Anterior knee pain was evaluated using the visual analog scale. Knee function was evaluates with KOOS rating scale.

RESULTS

The target TT-TG distance was realized in 28, 29 and 29 patients respectively in the three groups. Finally 25, 28, and 26 patients, respectively in the tree groups were followed up for more than 2 years. No medial over-correction of the patella position was observed in any groups. There was no statistical significant distance between the three groups regarding the medial-lateral position of the patella and development of PFOA in CT examination. There was no statistical significant difference regarding the VAS and the KOOS score between each two groups.

CONCLUSION

In anteromedialization of the patella for recurrent patella dislocation, over-correction of the TT-TG distance to over 0 mm resulted in no obvious adverse effect regarding the position of the patella and signs of PFOA.