ISAKOS

International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine

9th Biennial ISAKOS Congress • May 12-16, 2013 • Toronto, Canada

Paper #81

Isolated Medial Patellar Femoral Ligament Reconstruction for Recurrent Patella Dislocation: A Prospective Cohort Study

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Summary:
Isolated medial patellar femoral ligament reconstruction for recurrent patella dislocation: a prospective cohort study

Abstract:
Introduction:
Several medial patellofemoral ligament (MPFL) reconstruction procedures have been proposed to manage recurrent patellar dislocation. No clear superiority of a surgical technique has been evident over another. This prospective cohort study evaluates clinically and functionally a selected group of patients who underwent isolated anatomic MPFL reconstruction with autogenous hamstring grafts for chronic patellar dislocation.

Hypothesis:
The reconstruction of the MPFL using hamstring passed through a double patellar transverse bony tunnel technique is an effective management modality for recurrent patellar dislocation in patients without any predisposing factors.

Materials and Methods:
Twenty-eight patients with chronic patellar instability without any anatomic predisposing factors, experiencing recurrent unilateral patellar dislocation, were included in the study. The patients were regularly followed-up postoperatively at 2, 4, 8, 12, and 24 weeks, and then annually. Evaluation included the modified Cincinnati and the Kujala scores, anthropometry, plain radiography, and isokinetic dynamometry.

Results:
The average follow-up was 3.1 years (range, 2.5-4 years). The mean modified Cincinnati score increased from 52 preoperatively to 89 ($P = .001$). The mean Kujala scores increased from 45 preoperatively to 83 ($P = .03$). The muscle volume of the thigh of the operated limb increased with time, but remained less well developed than the nonoperated limb ($P = .04$). The mean Insall-Salvati index was 1.1 (range, 0.9-1.2) preoperatively and remained within normal range (1.1 [range, 0.9 to 1.2]) ($P = .07$), at latest follow-up. Significant isokinetic strength differences were found between the operated and the contralateral limbs ($.05 < P < .006$), even at the latest follow-up. Three patients experienced a new patellar dislocation.

Conclusion:
The high percentage of success (79.2%) and the low patellar dislocation rate (10.7%) in our series probably depends on patient selection. The percentage of redislocation is comparable with that in previous studies. Our technique does not preclude further surgical procedures, such as the Elmslie-Trillat osteotomy. Inhibition of the knee extensor muscle complex seems to persist despite subjectively successful surgery, and despite appropriate postoperative rehabilitation, muscle atrophy may be difficult to overcome. It is possible that heavy resistance training may have to be implemented to improve these findings. MPFL reconstruction using hamstring tendon passed through a double patellar transverse bony tunnel technique is a safe, reliable management option for recurrent patellar dislocation in patients without any predisposing anatomic factors. The superiority of this technique over others can only be

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established in an adequately powered randomized controlled trial with long term follow-up.