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Summary:
Fibular based techniques have similar outcomes to tibiofibular based techniques for posterolateral corner injuries. The fibular-based technique seems to be the more viable treatment option in view of being less technically demanding and invasive and requiring fewer grafts with a quicker operative time.

Data:
Background: Anatomical reconstruction is the gold standard treatment for posterolateral corner (PLC) injuries of the knee. They are classified into either fibular- or tibiofibular-based reconstructions based upon distal constructs. Despite comparable outcomes in biomechanical studies, clinical results comparing these constructs remain elusive with no consensus reached regarding the best treatment option. Purpose: To perform a systematic review and meta-analysis to compare if one construct is superior to the other in both clinical outcomes and restoration of stability. Study Design: Meta-Analysis Methods: The Cochrane Controlled Register of Trials, PubMed, Medline and Embase were used to perform a systematic review and meta-analysis using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) criteria with the Cochrane Collaboration tools. Results: The initial search identified a total of 524 studies, 22 of which met inclusion criteria and were included in the study. There were 332 patients (60% male, 40% female), 159 (47.4%) underwent MCL reconstruction with autograft and 173 (52.5%) with allograft. 31.2% of patients undergoing MCL reconstruction with allograft had concomitant anterior cruciate ligament (ACL) reconstruction, as compared to 0 patients undergoing MCL reconstruction with autograft and ACL reconstruction. The most common autografts used were semitendinosus (82, 96.4%) and bone-patellar tendon-bone (3, 3.5%). The most common allografts were the achilles tendon (124, 48.4%), semitendinosus (29.4%), and tibialis anterior (22.1%). Patient reported outcomes such as pain and functionality show strong improvement after MCL reconstruction and indicate greater long-term success compared to MCL repair, regardless of the use of autograft or allograft. Pain (measured by Lysholm scores) improved on average from 54.4 to 89.6 and post-operative functionality (measured by International Knee Documentation Committee (IKDC) scores) improved on average from 53.1 to 88.3 in patients with MCL reconstruction. There was no significant difference in post-operative Lysholm and IKDC scores between MCL reconstruction with autograft or allograft. Two of the 22 studies included data on 63 MCL repair patients, all of which experienced statistically significant lower Lysholm and IKDC scores than their reconstruction counterparts. Radiographic analysis demonstrated that 16 (10.1%) patients who underwent MCL reconstructions using autograft had post-operative valgus instability, whereas about 5 (2.8%) patients who underwent MCL reconstructions using allograft led to the same outcomes. Graft survivorship was slightly higher in MCL reconstruction using allograft when compared to autograft, but this was not statistically significant. Additionally, compared to MCL-only reconstruction, 82 patients underwent MCL reconstruction and primary or revision ACL reconstruction. 36 (43.9%) of these patients presented with knee extension deficits and failure of valgus stress tests, most of them undergoing MCL reconstruction and revision ACL reconstruction. Conclusions: MCL reconstruction with either autograft or allograft leads to similar clinical outcomes. Graft failure and post-operative functional limitations occurred more frequently in patients who underwent MCL reconstruction using autograft. MCL reconstruction combined with primary or revision ACL reconstruction results in a higher rate of valgus stress and flexion deficits. Allograft may be the preferred option for MCL reconstruction owing to lower failure rate.

Category: Knee - Ligaments (Not ACL)

What Is the Meaning of Popliteal Hiatus Widening on Magnetic Resonance Imaging?

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Summary:
Patients with unstable tear on discoid lateral meniscus and lateral meniscus demonstrated large hiatus width that should carefully be evaluated in meniscus repair around the popliteal hiatus.

Data:
Introduction: Previous studies have shown that the widening of the popliteal hiatus of the lateral meniscus (LM) on magnetic resonance imaging (MRI) led to recurrent subluxation of LM. Discoid lateral meniscus (DLM) has a high rate of peripheral rim instability, high predisposition to tear, and common mechanical symptoms. However, MRI studies evaluating the popliteal hiatus of DLM and LM have rarely been reported. This study aimed to evaluate the association between popliteal hiatus width on MRI, torn DLM, and LM tears. Materials and Methods: We included 193 lateral meniscal disorder knees (mean age, 34.6 ± 14.2 years) treated with arthroscopic meniscus repair or partial meniscectomy by senior surgeon from January 2011 to August 2020. The inclusion criteria were as follows; 1) torn DLM 2) LM tear, and 3) a stable knee. In addition, 50 subjects with normal knees were enrolled as controls. All patients were divided into four studies comparing outcomes of MCL reconstruction with autograft versus allograft. Studies were included if they evaluated clinical outcomes following MCL reconstruction using autograft and/or allograft. Studies with concomitant knee ligament injury other than the anterior collateral ligament were excluded. A quality assessment was performed using the modified Coleman Methodology Score. Risk-of-bias assessment was performed using the Risk of Bias In Non-randomized Studies–of Interventions and the Cochrane Collaboration tools. Results: The initial search identified a total of 524 studies, 22 of which met inclusion criteria and were included in the study. There were 332 patients (60% male, 40% female), 159 (47.4%) underwent MCL reconstruction with autograft and 173 (52.5%) with allograft. 31.2% of patients undergoing MCL reconstruction with allograft had concomitant anterior cruciate ligament (ACL) reconstruction, as compared to 0 patients undergoing MCL reconstruction with autograft and ACL reconstruction. The most common autografts used were semitendinosus (82, 96.4%) and bone-patellar tendon-bone (3, 3.5%). The most common allografts were the achilles tendon (124, 48.4%), semitendinosus (29.4%), and tibialis anterior (22.1%). Patient reported outcomes such as pain and functionality show strong improvement after MCL reconstruction and indicate greater long-term success compared to MCL repair, regardless of the use of autograft or allograft. Pain (measured by Lysholm scores) improved on average from 54.4 to 89.6 and post-operative functionality (measured by International Knee Documentation Committee (IKDC) scores) improved on average from 53.1 to 88.3 in patients with MCL reconstruction. There was no significant difference in post-operative Lysholm and IKDC scores between MCL reconstruction with autograft or allograft. Two of the 22 studies included data on 63 MCL repair patients, all of which experienced statistically significant lower Lysholm and IKDC scores than their reconstruction counterparts. Radiographic analysis demonstrated that 16 (10.1%) patients who underwent MCL reconstructions using autograft had post-operative valgus instability, whereas about 5 (2.8%) patients who underwent MCL reconstructions using allograft led to the same outcomes. Graft survivorship was slightly higher in MCL reconstruction using allograft when compared to autograft, but this was not statistically significant. Additionally, compared to MCL-only reconstruction, 82 patients underwent MCL reconstruction and primary or revision ACL reconstruction. 36 (43.9%) of these patients presented with knee extension deficits and failure of valgus stress tests, most of them undergoing MCL reconstruction and revision ACL reconstruction. Conclusions: MCL reconstruction with either autograft or allograft leads to similar clinical outcomes. Graft failure and post-operative functional limitations occurred more frequently in patients who underwent MCL reconstruction using autograft. MCL reconstruction combined with primary or revision ACL reconstruction results in a higher rate of valgus stress and flexion deficits. Allograft may be the preferred option for MCL reconstruction owing to lower failure rate.

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