KEY PROCEDURES

MENISCAL ROOT REPAIRS

Robert F. LaPrade, MD, PhD, Samuel G. Moulton, BA, Tyler R. Cram, MA, ATC, OTC, Andrew G. Geeslin, MD, Christopher M. LaPrade, BA, and Lars Engebretsen, MD, PhD

Based on original articles:

Arthroscopy. 2009 Sep;25(9):951-8, *Am J Sports Med*. 2014 Dec;42(12):3016-30, and *Am J Sports Med*. 2014 Mar;42(3):699-707.

COPYRIGHT © 2015 BY THE
JOURNAL OF BONE AND JOINT
SURGERY, INCORPORATED

Go to
surgicaltechniques.
jbjs.org/ to view the
video article
described in this
summary.

Abstract

Meniscal root tears are substantial injuries that usually require surgical management. If left untreated, meniscal root tears can lead to the rapid onset of osteoarthritis similar to that seen after a total meniscectomy. Meniscal root tears often go unnoticed on magnetic resonance imaging and arthroscopy, in large part because meniscal root anatomy and its biomechanical importance have been defined only recently. In a transtibial meniscal root repair, the current clinical standard of care, the root is reattached to its native attachment site on the tibial plateau, restoring tibiofemoral contact mechanics. While this video article shows a posterior medial root repair technique, the same anatomic, biomechanical, and surgical principles apply to a posterior lateral meniscal root attachment.

The principal steps in this procedure include (1) verifying the presence of a posterior medial meniscal root tear with arthroscopic visualization and probing, (2) inspecting the root tear and debriding the root attachment site to bone with a curet, (3) arthroscopic release of any adhesions that cause retraction of the meniscal root to a nonanatomic position, (4) drilling of two separate transtibial tunnels that extend down to the anteromedial portion of the tibia, (5) placing an accessory portal to pass the sutures, (6) placing two simple sutures through the torn meniscal root and shuttling them down the tibial tunnels, and (7) tying the sutures over a surgical button on the anteroproximal portion of the tibia with the knee flexed 90°. Postoperatively, patients remain non-weight-bearing for six weeks. Passive knee flexion from 0° to 90° is allowed for the first two weeks. After two weeks, motion is increased as tolerated. Patients initiate weight-bearing at postoperative week six and commence the use of a stationary bicycle. Resistive exercises are slowly progressed, and the patient should avoid squatting as well as squatting and lifting for four months. Patients are expected to return to normal physical activity within four to six months postoperatively.

Disclosure: None of the authors received payments or services, either directly or indirectly (i.e., via his or her institution), from a third party in support of any aspect of this work. One or more of the authors, or his or her institution, has had a financial relationship, in the thirty-six months prior to submission of this work, with an entity in the biomedical arena that could be perceived to influence or have the potential to influence what is written in this work. Also, one or more of the authors has had another relationship, or has engaged in another activity, that could be perceived to influence or have the potential to influence what is written in this work. The complete **Disclosures of Potential Conflicts of Interest** submitted by authors are always provided with the online version of the article.

Robert F. LaPrade, MD, PhD

Samuel G. Moulton, BA

Tyler R. Cram, MA, ATC, OTC

Andrew G. Geeslin, MD

Christopher M. LaPrade, BA

Steadman Philippon Research Institute, 181 West Meadow Drive, Suite 1000, Vail, CO 81657

Lars Engebretsen, MD, PhD

Department of Orthopaedic Surgery, Oslo University Hospital, Oslo Sports Trauma Research Center, PB 4014 Ullevål Stadion, 0806 Oslo, Norway

References

1. LaPrade CM, Jansson KS, Dornan G, Smith SD, Wijdicks CA, LaPrade RF. Altered tibiofemoral contact mechanics due to lateral meniscus posterior horn root avulsions and radial tears can be restored with in situ pull-out suture repairs. *J Bone Joint Surg Am.* 2014 Mar 19;96(6):471-9.
2. Padalecki JR, Jansson KS, Smith SD, Dornan GJ, Pierce CM, Wijdicks CA, LaPrade RF. Biomechanical consequences of a complete radial tear adjacent to the medial meniscus posterior root attachment site: in situ pull-out repair restores derangement of joint mechanics. *Am J Sports Med.* 2014 Mar;42(3):699-707.
3. Harner CD, Mauro CS, Lesniak BP, Romanowski JR. Biomechanical consequences of a tear of the posterior root of the medial meniscus. Surgical technique. *J Bone Joint Surg Am.* 2009 Oct 1;91(Suppl 2):257-70.
4. Lee JH, Lim YJ, Kim KB, Kim KH, Song JH. Arthroscopic pullout suture repair of posterior root tear of the medial meniscus: radiographic and clinical results with a 2-year follow-up. *Arthroscopy.* 2009 Sep;25(9):951-8.
5. Kim JH, Chung JH, Lee DH, Lee YS, Kim JR, Ryu KJ. Arthroscopic suture anchor repair versus pullout suture repair in posterior root tear of the medial meniscus: a prospective comparison study. *Arthroscopy.* 2011 Dec;27(12):1644-53. Epub 2011 Oct 7.
6. Bhatia S, LaPrade CM, Ellman MB, LaPrade RF. Meniscal root tears: significance, diagnosis, and treatment. *Am J Sports Med.* 2014 Dec;42(12):3016-30. Epub 2014 Mar 12.
7. Johannsen AM, Civitarese DM, Padalecki JR, Goldsmith MT, Wijdicks CA, LaPrade RF. Qualitative and quantitative anatomic analysis of the posterior root attachments of the medial and lateral menisci. *Am J Sports Med.* 2012 Oct;40(10):2342-7. Epub 2012 Sep 7.
8. Matheny LM, Ockuly AC, Steadman JR, LaPrade RF. Posterior meniscus root tears: associated pathologies to assist as diagnostic tools. *Knee Surg Sports Traumatol Arthrosc.* 2014 May 28. Epub 2014 May 28.