

Need Room to Operate? Partial and Intentional Release of the Knee Medial Collateral Ligament for Medial Meniscal Surgery



Abstract: Cutting the medial collateral ligament (MCL), even in part, seems counterintuitive. However, medial meniscal surgery is not always easy, and iatrogenic articular cartilage damage can be a complication of partial meniscectomy, meniscus repair, and/or allograft transplantation in a tight knee. Fortunately, partial tears of the MCL tend to heal, and most patients do tolerate iatrogenic, partial MCL tearing without negative long-term sequelae. However, rather than accidentally tearing the MCL during medial meniscal surgery, if you need room to operate, partially release the MCL.

We arthroscopic surgeons spend most of our time repairing tendons and ligaments, so to cut the medial collateral ligament (MCL), even in part, seems counterintuitive. In practice, MCL partial release is an integral part of medial meniscus allograft transplantation. Thus, some of us have seen or performed MCL release, or at least observed the procedure in training. However, meniscus transplantation is not widely performed, and MCL release is uncommon.

In contrast to the rarity of meniscus transplantation, arthroscopic partial medial meniscectomy is one of the most common, if not the most common, procedures many of us perform. Partial medial meniscectomy is basic—veritable “bread and butter.” Yet truth be told, partial medial meniscectomy is not always easy and, respectfully, those who disagree may lack experience, humility, or both.

In a “tight” knee, a small knee, or a varus knee, all of which are common in our patients and athletes, the small arthroscopic shavers or meniscal biters we employ, typically though only 4.5 mm, 3.5 mm, or even 2.7 mm in size, can seem not that small. Even with expertise, experienced assistance, and a well-positioned leg holder or lateral post allowing us to stretch the MCL to its limit as we push the knee into valgus and flex or extend to optimize access, sometimes it is not possible to trim or debride an irreparable medial meniscus tear without touching or iatrogenically scuffing the articular cartilage. And iatrogenic articular cartilage damage is clearly a complication that could negate the benefit of treating the meniscus tear, particularly because patients with less meniscal tissue have less chondroprotection.

In addition, aggressive knee valgus positioning during partial medial meniscectomy, meniscal repair, and/or meniscal allograft transplantation can result in sudden, unintended tearing of the MCL. Pushing the MCL to its limit—versus past its limit—is a fine line. As surgeons who have felt the MCL unintentionally “give” as a result of our application of valgus stress, we can assure you that the feeling is troubling, to say the least. Fortunately, partial tears of the MCL, particularly at the femoral attachment, do tend to heal well, and most patients seem to tolerate iatrogenic, partial MCL tearing during partial medial meniscectomy without negative long-term sequelae.¹ In such cases, bracing is also an option during the postoperative period, yet we have a concern that, with or without a brace, some patients may experience symptomatic laxity. From our point of view, unintentional, uncontrolled, iatrogenic MCL injury is best avoided.

Returning to partial, intentional, surgical release of the MCL, if it’s indicated for meniscal allograft transplantation and perhaps meniscus root repair, then why not for partial medial meniscectomy, or routine meniscal repair, in a tight knee? We’ve tried it (typically after a struggle in a very tight medial compartment), and it works. It makes a difficult case simpler. Invariably, afterward, we ask ourselves, “Why don’t I do this more often?” We resolve to do so, but then we tend not to do so.

Why the reluctance to release the MCL? Concerns could include iatrogenic morbidity, lack of experience, unclear outcomes, or a belief that, struggle or not, medial meniscal surgery can be accomplished without cartilage damage—even in a tight compartment. However, with regard to the last point and as above, our belief is that articular cartilage damage is unavoidable some of the time in the tightest medial knee compartments. Thus, MCL partial release should be thoughtfully considered.

How is MCL partial release performed?

We highly recommend a recent technical note and accompanying video by Moran, Demers, Awowale, Werner, and senior author Mark Miller of the University of Virginia, Department of Orthopaedic Surgery, in *Arthroscopy Techniques*.² Their technique is percutaneous, as is the excellent technique described by Todor et al., also in our venerable *Arthroscopy Techniques* journal.³

More interested in a transportal technique?

We recommend the technical note and video by Atoun et al. in, you guessed it, *Arthroscopy Techniques*.⁴ And, the technical note and video by Javidan et al. in, that's correct and yet again, *Arthroscopy Techniques*.⁵

And, what are the results of MCL partial release?

Check out the cover photos gracing this current issue of *Arthroscopy*. Thank you again to Dr. Miller and his team, whom we credit for the photos. The results of MCL partial release, as clearly indicated on our cover are quite simply...*more room to operate!* (We wonder if this common idiom originated in the surgical theater?)

And, what is the morbidity of MCL partial release?

We credit Miller and colleagues a third time; hats off to the Virginia team for achieving a “trifecta”: in addition to their Technical Note with video² and this issue's cover photo, they published their original scientific article in the March issue of *Arthroscopy*, “Associated Morbidity After the Percutaneous Release of the Medial Collateral Ligament for Knee Arthroscopy.”⁶ Readers are directed to this timely Systematic Review of the literature by Moran, Awowale, Werner, Fox, and Miller.

But wait. What's that? A quad? A four-bagger? A homerun?

Yes, it's true. Mark Miller achieves the quadfecta. Add to (1) the technique, (2) the cover photo, and (3) the original scientific article—drumroll, please—(4) the podcast! Please listen as Mark Miller and our *Arthroscopy* Podcaster, Associate Editor, and Social Media Board Member, Andrew Sheean discuss, “Associated Morbidity after Percutaneous Release of the Medial Collateral Ligament for Knee Arthroscopy.”⁷

Looking back, it was only in 2016 that we published the pioneering expert opinion of AANA Past President Jack Bert: “First, Do No Harm: Protect the Articular Cartilage When Performing Arthroscopic Knee Surgery!”⁸ Here, Bert presented his rationale and described many techniques for “partial medial collateral ligament release in a tight knee when attempting to access the posterior medial

compartment.” Associate Editor Emeritus, Martin Leland, in an Editorial Commentary on Bert's article, wrote: “Chondrocytes Trump Ligaments! Partial Release of the Medial Collateral Ligament During Knee Arthroscopy Protects Chondrocytes.”⁹

To conclude, we again quote Past President Bert and heed his decisive words: “Release of the Medial Collateral During Arthroscopic Meniscectomy Should Be Encouraged, Not Feared!”¹⁰

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