



Repair: a viable option for management of medial collateral ligament injury during primary total knee arthroplasty

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Intraoperative injury to the medial collateral ligament (MCL) is a rare but important potential complication of total knee arthroplasty (TKA). Our group recently published a retrospective review of 45 intraoperative injuries to the MCL that were managed with intraoperative repair (1). Specifically, for mid-substance lacerations, end-to-end suture repair was performed; for avulsions, screw/washer constructs or suture anchors were used for reattachment. Additionally, patients wore an unlocked hinged knee brace for 6 weeks postoperatively. The study included both posterior-stabilized [10] and cruciate-retaining [35] TKAs.

In our study, at a mean follow-up of 99 months, there were no subjective complaints or physical exam findings of instability. Mean Hospital for Special Surgery knee score increased from 47 preoperatively to 85 postoperatively. Five TKAs required intervention for stiffness (4 manipulations under anesthesia and 1 revision) and two required revision for aseptic loosening. Notably, in all three knees undergoing re-operation, the MCL was noted to be in continuity.

Overall, we believe that these findings suggest that management of intraoperative MCL injury with primary repair is a reasonable option. As Dr. Lee points out, additional constraint comes with the disadvantages of the potential for an increased polyethylene wear rate (2), increased stresses at the bone-cement/cement-implant interface (2-4), and removal of additional host bone stock. These potential disadvantages of increased constraint are not likely to display themselves until long-term follow-up—follow-up that neither our study nor studies using increased restraint have yet achieved. On the other hand, if failure

of direct repair of the MCL were to occur, it might be expected to occur early. Moreover, an increase in articular constraint also typically increases the cost and complexity of the operation, and an implant with greater constraint may not always be available intraoperatively.

One apparent disadvantage of our protocol was postoperative stiffness, with several patients requiring manipulation and even revision surgery. Such results have not been reported in other series of direct repair. We attribute these findings in part to use of the hinged knee brace, which may have decreased mobility during the first 6 postoperative weeks. While all but two knees in our study eventually achieved 90 degrees of flexion, these findings do suggest a potential risk of postoperative bracing in this setting. Unfortunately, we do not know if the brace was necessary or critical to our overall good reported results.

Unfortunately there are no studies that directly compare primary repair of the MCL to increasing implant constraint. However, the available literature suggests that both are reasonable options with good supporting evidence for management of this complication. At the end of the day, the decision to attempt primary repair or convert to increased constraint may be based on the intraoperative findings, the quality of the soft tissues, the ability to repair the ligament, the experience of the surgeon, or even the availability of a constrained implant at the time of surgery. The next step in better understanding how to manage these injuries may be a prospective, randomized trial. However, the relatively rare occurrence of these injuries [reported at between 0.5% and 3% (1,3,5-7)] could make such a trial difficult to perform.

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Footnote

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