

Early Manipulation of a Stiff Total Knee Arthroplasty Increases Risk of Re-Manipulation

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INTRODUCTION: Arthrofibrosis is rare but devastating complication following total knee arthroplasty (TKA). When nonoperative management is ineffective, manipulation under anesthesia (MUA) is routinely performed. Although it is recognized that MUA performed within 12 weeks of TKA yields favorable outcomes, the optimal timing within this window remains uncertain.

METHODS: Patients undergoing TKA from 2010 to 2021 were identified in the PearlDiver database (n = 1,453,574). Patients who underwent MUA within 12 weeks postoperatively were stratified by initial MUA within zero to six weeks postoperatively versus six to twelve weeks. Alternative causes of arthrofibrosis, including infection, aseptic loosening, and periprosthetic fracture, were excluded. The incidence of repeat MUA in each group was compared using a chisquared analysis.

RESULTS: In total, 5,479 patients received MUA following TKA for arthrofibrosis. Of these, initial MUA was performed at 0- 6 weeks in 25% of patients (n=1,376), while 75% underwent MUA at 6-12 weeks (n = 4,103). Patients who underwent early manipulation were at higher risk of requiring repeat manipulation than those patients who underwent initial MUA at 6-12 weeks, with a 29% versus 10% re-manipulation rate (RR 1.41, 95% CI 1.29-1.54).

DISCUSSION AND CONCLUSION: This study found a significant association between manipulation within six weeks post-operatively and need for repeat MUA at a later date. Early MUA after TKA may incite an additional inflammatory response, predisposing patients to continued stiffness.