Anterior Cruciate Ligament (ACL) Graft Failure Rates at 2 years in Combined ACL-Medial Collateral Ligament (MCL) Injuries Was Not Significantly Influenced by Type of MCL Management in Retrospective Database Review.

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INTRODUCTION:
Combined ACL-MCL injuries are the most common multiligament knee injuries, and there is no consensus as to optimal management of the MCL injury. Some studies have asserted that non-operative management is ideal while others have shown good outcomes for MCL repair/reconstruction, particularly for higher grade MCL injuries. Our aim is to determine if ACL graft failure rate in combined ACL-MCL injury is affected by type of MCL management in a retrospective EMR database review with a long collection period. Our hypothesis is that operative intervention of MCL injuries in combined ACL-MCL injuries will lead to a lower rate of ACL graft failure due to increased lateral knee stability.
METHODS:
We used CPT codes and physical exam data to retrospectively identify patients aged 18+ that underwent primary ACL reconstruction (ACLR) and had a minimum follow up of 2 years using institutional data from a single center electronic medical record (EMR), including five sports fellowship trained surgeons, over a 23-year collection period (2000-2023). We excluded patients if: age < 18, history of prior ipsilateral knee surgery, additional ligament injuries to ipsilateral knee, concomitant fracture, neurovascular injury, or incomplete EMR examination data. Patients were considered to have ACL graft failure if they underwent subsequent ACL surgery within 2 years of primary ACL reconstruction at the same center.
RESULTS: Our inclusion/exclusion criteria yielded 2322 patients and 2501 procedures eligible for analysis. The isolated ACLR only subgroup contained 1995 patients and 2123 procedures with 63 patients requiring ACL revision surgery, yielding a failure rate of 3.0%. The ACLR with MCL non-operative management subgroup contained 252 patients/253 procedures, and 5 patients underwent revision surgery, yielding a failure rate of 2.0%. The ACLR and MCL repair subgroup contained 28 patients with 29 procedures and had 1 revision surgery, yielding a failure rate of 3.4%. The ACLR plus MCL reconstruction subgroup had 93 patients and 96 procedures with 1 patient requiring revision surgery, yielding a failure rate of 1.0%.
DISCUSSION AND CONCLUSION:
The isolated ACL injury group treated with primary ACL reconstruction (ACLR) was utilized as a control to establish a baseline ACLR failure rate (3.0%). The ACLR+MCL non-operative, ACLR+MCL Repair, and ACLR+MCL reconstruction subgroups all had similarly low failure rates at 2.0%, 3.4%, and 1.0% respectively, as compared to the ACLR only control. These results indicate that MCL tear management, including non-operative, repair, and reconstruction, when indicated and performed in combination with ACL reconstruction, results in a similarly low ACL graft retear rate as compared to isolated ACLR. The difference between our study data, where isolated ACLR failure rate was similar to subgroups with concomitant MCL injury, and prior data suggesting that concomitant MCL injury may lead to higher ACL reconstruction retear rates could be explained by inclusion of all MCL injury severities as a single cohort, as well as sample size limitations. Given that there is an inherent selection bias in subgroups, as surgeons will choose treatment options in patients based on their specific injury characteristics, it is encouraging that the subgroup failure rates are relatively similar. This finding would likely support the continued practice of surgeons individualizing treatment of combined ACL-MCL injury based on injury characteristics without significant concern that ACL failure rate will markedly increase.