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Paper #198

Measuring Outcomes After Anterior Cruciate Ligament Reconstruction Using the Norwegian Knee Ligament Registry Of 4,691 Patients: How Does Meniscal Repair or Resection Affect Short-Term Outcomes?

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Summary:
Patients with either a LM repair, MM resection, or LM resection with concomitant ACLR had equivalent two-year postoperative KOOS scores to those with an isolated ACLR

Abstract:
BACKGROUND
While the effects of a concurrent meniscal resection and anterior cruciate ligament reconstruction (ACLR) decrease patient outcomes and increase the rate of osteoarthritis over the long-term, short-term patient functional outcomes are not well known. This lack of information prevents the formulation of a patient's complete short- and long-term prognosis because it is currently difficult to make evidence-based recommendations on whether a meniscal repair or resection, when concurrent with ACLR, will impact a patient's outcomes in the first few years after surgery. Ultimately, this information may also effect the recommendations on how long a patient should be followed post-operatively.

HYPOTHESIS
To compare the pre-operative and two-year post-operative KOOS subscale scores after ACLR with and without meniscal injury. We hypothesized that patients with a medial meniscal (MM) or lateral meniscal (LM) resection with an ACLR would have significantly decreased two-year postoperative clinical outcomes than patients with an isolated ACLR, while those with an ACLR with a meniscal repair would be indistinguishable from isolated ACLR. It was also hypothesized that patients that had an ACLR with MM or LM meniscal repair or resection would also have decreased pre-operative KOOS subscale scores than isolated ACLRs.

Type of Study: Cohort study; Level of evidence, 2.

METHODS
The Norwegian Knee Ligament Registry (NKLR) was used to evaluate outcomes for 14,142 patients with primary ACLR. The KOOS scoring system evaluated patients on 5 subscales (Pain, Other Symptoms, Activities of Daily Life (ADL), Sport and Recreation Function (Sport/Rec), and Quality of Life (QoL) at time of surgery and at two-year follow-up. Patients with ACLR with LM repair, LM resection, MM repair or MM resection were compared to patients with isolated ACL tears using bivariate statistical tools and a multiple linear regression model.

RESULTS
Pre-operatively, in comparison to isolated ACLR, patients with an ACLR with either MM repair or MM resection had significantly lower KOOS subscores, those with an ACLR and LM resection were not significantly different, and those with a concurrent LM repair had significantly decreased scores on the Other Symptoms, Pain, and ADL subscales.

Post-operatively, in comparison to isolated ACLR, no differences between two-year KOOS outcomes were noted between patients with ACLR and either LM repair, MM resection, or LM resection; however, those with a concurrent MM repair had significantly lower Other Symptoms and QoL KOOS subscale scores.

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CONCLUSIONS

Patients with either a LM repair, MM resection, or LM resection with concomitant ACLR had equivalent two-year postoperative KOOS scores to those with an isolated ACLR. Also, patients with an ACLR with MM repair had relatively effective outcomes given their lower pre-operative KOOS scores. Further longer term follow-up of this cohort of patients is recommended.

CLINICAL RELEVANCE

Patients with ACLR with resection do not exhibit decreased clinical outcomes at two years post-operatively. Given the historical reports of poorer long-term outcomes after ACLR with meniscal resection in comparison to isolated ACLR, it is recommended that clinicians follow patients with ACLR and concurrent meniscal treatment for longer than two years to determine their longer term clinical and objective outcomes.