No Difference in Surgical Failure Rates of Radial Meniscus Tear Repairs with and without Concomitant Anterior Cruciate Ligament Reconstruction

Parker Andrew Cavendish, Eric Milliron, Grace Eileen Monroe, Jarod Karom, Tyler Barker, Christopher C Kaeding[1], Robert Andrew Magnussen, David Clint Flanigan[1]
[1]OSU Sports Medicine Ctr

INTRODUCTION: Repairing the meniscus has become a priority in managing meniscal tears with advancement of meniscus repair techniques. Radial meniscus tears have traditionally been associated with a poor prognosis because they occur perpendicular to circumferential fibers, compromising hoop tension. However, advances in surgical technique and biologic augmentation have led to an increase in attempted repair of these complex injuries that were traditionally treated with meniscectomy. These tears may also occur with concomitant knee injuries, such as an ACL rupture. Thus, the purpose of this study is to compare post-operative outcomes and surgical revision rates in patients who underwent radial meniscus tear repair with and without concomitant ACL reconstruction.

METHODS:

A retrospective study was performed to identify patients who underwent radial meniscus tear repair. Chart review was performed for 1506 patients who underwent meniscus repair at a single institution from 2012 to 2019. Demographic information, type of meniscus tear, concomitant ACL reconstruction, post-operative complications, repeat surgeries, and failure at the repair site were recorded. Isolated meniscus repairs were augmented with platelet rich plasma (PRP) at the time of repair. Demographics and outcomes between the two groups were compared with Fisher exact tests (two-tail).

RESULTS: Fifty patients (age, 31.8 ± 15.2 years; BMI, 30.2 ± 6.4 kg/m2) were identified who underwent a radial meniscus tear repair. Radial tear repair in patients who underwent concomitant ACL reconstruction differed significantly from those who did not only in age (ACL group, 26.0 ± 10.9 y; non-ACL group, 36.6 ± 16.7 y; p = 0.03). Of included patients, 23 (46.0%) underwent concomitant ACL reconstruction. Complications included recurrent swelling, stiffness, persistent pain, and repeat injury and were reported in 15 patients (30.0%). Four patients underwent repeat surgery for reasons unrelated to the radial tear repair (e.g. cyclops lesion, synovectomy, new meniscus tear). Two patients had radial tear repair failure that required surgical revision (4.0%) (p = 0.493).

DISCUSSION AND CONCLUSION: Isolated radial meniscus repairs with contemporary techniques and biological enhancement had similar failure rates when compared to radial meniscus tears repaired at the time of concomitant ACL reconstruction.