

Yildirim B, Carr JB, Tran S, Li J, Pierce J, Anderson MA, Diduch DR

Does the Anterolateral Ligament Heal? A Case Series Magnetic Resonance Imaging Review of Patients Requiring ACL Reconstruction

Introduction:

To investigate the frequency and characteristics of anterolateral ligament (ALL) healing in patients who experience anterior cruciate ligament (ACL) and ALL tears. We hypothesized that the ALL usually heals spontaneously after injury like other extra-articular ligaments, but that healing may vary with tear location.

Methods:

Our institution's electronic medical record database from 2009 to 2015 was queried for patients who underwent primary ACL reconstruction with a subsequent MRI. The exclusion criteria were set to exclude those who may have had an inadvertent ALL injury in the interval by excluding those with a clinical concern for ACL graft rupture or imaging confirming ACL graft rupture. These exclusion criteria included: intact ALL on the initial MRI, ACL graft rupture on the subsequent MRI, septic arthritis within 90 days of surgery, age younger than 15 or older than 50 years, injury > 90 days of initial MRI (to remove chronic injuries), and a Lachman exam $\geq 2A$ on exam prior to postop MRI. Each patient was diagnosed through consensus by two musculoskeletal radiologists with an intact, partially injured, or fully ruptured ALL on the initial and subsequent MRIs (Grade 1, 2, or 3). The location of ALL injury was also noted (femoral, midsubstance, or tibial).

Results:

34 total patients were found to fit our criteria with mostly diffuse or femoral sided tears and an average time of 1.4 years in between surgery and postoperative MRI. Postop MRIs revealed that 46% of ALLs healed completely and 68% improved in grade indicating healing. Statistically significant predictors of poor ALL healing were Age ≥ 30 , hamstring autograft, and graft size ≤ 8 mm. A trend was also noted in less frequent ALL healing in femoral sided tears.

Conclusion:

The ALL may heal less reliably for patients who underwent ACL reconstruction in older patients, hamstring autograft, particularly those with smaller graft sizes, and femoral sided ALL tears. These patients may have increased rotational instability after their ACL reconstruction preventing ALL healing. Though further analysis is required, this patient subset may benefit from a lateral extra-articular augmentation procedure during the initial ACL reconstruction.