

The Lesion of the Anterolateral Ligament of the Knee Evaluated by Magnetic Resonance Image is a Predictor of Failure of an Anterior Cruciate Ligament Reconstruction

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INTRODUCTION:

The anterolateral ligament (ALL) of the knee has been described to have a critical role in anterolateral rotational stability; however, it is still controversial about when an ALL plasty or reconstruction should be associated with a primary anterior cruciate ligament reconstruction (ACL-R).

The aim of this study is to evaluate, in ACL injuries, the association between the visualization of ALL tears in magnetic resonance imaging (MRI) and failure of an isolated primary ACL-R.

METHODS:

A retrospective case-control study to discriminate between failures and non-failures of an ACL-R based on ALL injuries on MRI. Eighty-six patients with isolated primary ACL-R were included, consisting of 43 patients with ACL reconstruction failure and 43 without it.

A musculoskeletal radiologist, blinded to the study, underwent a pilot screening of sensitivity and specificity for the visualization of ALL tears, according to thickness and signal of the ligament in MRI.

Subsequently, the visualization of the ALL, the presence of tears, and the injury's degree were evaluated in all patient's images of the primary ACL injury.

The statistical analysis included logistic regression to calculate the Odds Ratio (OR) between ALL tears and failure of the ACL-R.

A power of 80% and a significance of 5% were considered.

RESULTS:

The sensitivity and specificity of the musculoskeletal radiologist for ALL tears were 67% and 63%, respectively.

Of the 86 MRIs analyzed, it was possible to visualize part of the ALL in 100% of the patients and the entire ligament in 34,9%.

In the case group, 37.2% had an ALL tear on the MRI of the primary injury. In the control group, 20.9% presented an ALL tear on the MRI of the primary injury.

An ALL tear on MRI was associated with an ACL-R failure with an OR of 2.24 (p=0.0475).

DISCUSSION AND CONCLUSION:

The visualization of an ALL tear on MRI was significantly associated with ACL-R failure. The results obtained are supported by previous studies on the association of ACL-R and procedures on the ALL, however, there is no consensus regarding the surgical behavior in the presence of a tear of the anterolateral ligament of the knee associated with an ACL injury.

These results suggest that this ligament requires sufficient attention in the assessment of images prior to an ACL reconstruction, in order to detect early injuries, treat them, and thereby prevent failures of an ACL-R.

Visualizing an ALL tear on MRI of primary ACL injuries is associated with an increased rate of failure of an isolated primary ACL-R.