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MRI Evaluation of Anterolateral Ligament of the Knee: A Cross-Sectional Study in Malaysia

By: [Kow, RY](#) (Kow, Ren Yi)¹; [Low, CL](#) (Low, Chooi Leng)²; [Siron-Baharom, KN](#) (Siron-Baharom, Khairul Nizam)¹; [Said, SNBS](#) (Said, Siti Nor Badriati Sheikh)³
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Abstract

Introduction

After detailed anatomical delineation of the anterolateral ligament (ALL) of the knee, there is a surge in research on this anatomical structure. Owing to the anatomical variation and lack of experience in the identification of this structure, magnetic resonance (MR) evaluation of the ALL produces mixed results. It was aimed to evaluate the ALL using the routinely performed MR imaging of the knee and to determine any associated factors with ALL injuries.

Materials and methods

Thirty-six MR images of the knee from 31 patients from January 1, 2017, to June 30, 2017, are evaluated. MR sequences performed include T1-weighted, T2-weighted, proton density (PD), and PD fat saturation (FS). All MR images were double-read by two authors and approved by a consultant radiologist with more than 20 years of radiological experience. The ALL was divided into three portions: femoral, meniscal, and tibial, and the ALL was considered fully visualized when all three portions were seen on MR images.

Results

At least a portion of the ALL was visualized in 27 scans (75%), and it was fully visualized in 20 scans (55.6%). The femoral portion was the most commonly identified (75%), followed by the meniscal portion (69.4%) and the tibial portion (58.3%). ALLs were best visualized on coronal view in PD FS with the lateral inferior genicular artery as a guide to locate the bifurcation of the meniscal and tibial components.

Conclusion

The ALL can be visualized in routine 1.5-T MR imaging, either full delineation (55.6%) or partially visualized (75%). It is best characterized via a PD-weighted sequence with fat saturation on the coronal plane. The ALL injury was associated with an anterior cruciate ligament (ACL) injury.

Keywords

Author Keywords: anterolateral ligament; knee; anterior cruciate ligament; magnetic resonance imaging; injury

Keywords Plus: ANTERIOR CRUCIATE LIGAMENT; ANATOMY; ABNORMALITIES; INJURIES; TEARS; BAND

Author Information

Corresponding Address: Kow, Ren Yi (corresponding author)

▲ Int Islamic Univ Malaysia, Dept Orthopaed Traumatol & Rehabil, Kuantan, Malaysia

Affiliation

International Islamic University Malaysia

Addresses:

▲ ¹ Int Islamic Univ Malaysia, Dept Orthopaed Traumatol & Rehabil, Kuantan, Malaysia

Affiliation

International Islamic University Malaysia

▲ ² Int Islamic Univ Malaysia, Dept Radiol, Kuantan, Malaysia

Affiliation

International Islamic University Malaysia

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³ Hosp Tengku Ampuan Afzan, Dept Radiol, Kuantan, Malaysia

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