

What Is the State of the Evidence in Anterolateral Ligament Research?

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KEYWORDS

- Anterolateral ligament • Short lateral ligament
- Capsulo-osseous layer of the iliotibial band • Mid-third lateral capsular ligament
- Anterior band of the lateral collateral ligament • Anterior oblique band

KEY POINTS

- The anterolateral ligament (ALL) of the knee is a capsular structure that runs from the lateral femoral epicondyle to the lateral tibial plateau and has been the subject of recent renewed academic interest.
- Presently available literature on the ALL is limited in both volume and quality.
- Most research on the ALL consists of biomechanical, cadaveric, or radiographic studies whose primary goals are establishing fundamental biomechanical, anatomic, and/or radiographic properties of the ALL.
- There are few studies to date pertaining to the diagnosis, therapy, prevalence, or prognosis of injury to the ALL.
- Analysis of current ALL research suggests a need to increase the volume of high quality clinical and radiographic studies to expand knowledge regarding the role of the ALL in ligamentous knee injury and elucidate the optimal imaging technique, for both the intact and injured ALL.

Disclosures: There are no commercial or financial conflicts of interest.

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Clin Sports Med ■ (2017) ■–■
<http://dx.doi.org/10.1016/j.csm.2017.07.013>

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INTRODUCTION

The anterolateral ligament (ALL) of the knee is a capsular structure that runs from the lateral femoral epicondyle to the lateral tibial plateau.¹ This structure was initially described by Segond² in 1879 as a pearly fibrous thickening of the lateral knee capsule that emerged from the iliotibial band. Since Segond,² several investigators have described what is understood to be the ALL and imparted a variety of names to this ligament. Previous terms and structures related to the ALL include anterolateral capsule, capsulo-osseous layer of the iliotibial band, mid-third lateral capsular ligament, anterior band of the lateral collateral ligament, and anterior oblique band.^{3–7} The term “anterolateral ligament,” coined by Vieira and colleagues⁸ in 2012, appears to have become the common term used in recent literature.

Since its discovery, the ALL has been largely overlooked, and research into this structure throughout the twentieth century was limited. The recent popularity of anterior cruciate ligament (ACL) reconstruction has brought attention to the ALL and contributed to an expansion of research into this structure. A systematic review conducted by Van der Watt and colleagues,¹ found that the ALL was a distinct entity present in 96% of examined specimens, although prevalence across individual studies varied considerably. Several biomechanical studies suggest that the ALL contributes to rotary knee stability and thus playing a role in the pivot shift phenomenon.^{9,10} Proposed indications for combined ACL and ALL reconstruction or lateral extra-articular tenodesis include ACL tear with grade 3 + pivot shift, chronic ACL lesion, persistent pivot shift in the setting of multiple revision ACL reconstructions, radiographic lateral femoral notch sign, involvement in pivoting sports, and significant instability following ACL reconstruction.^{11,12} Evidence suggests that the ALL may be attached to the avulsed fragment of bone from the lateral tibial plateau seen in the setting of a Segond fracture (also known as lateral capsular sign), a radiographic finding commonly associated with ACL injury.^{13,14}

The purpose of this systematic review was to describe the quality of literature on the ALL from January 1, 2000, to December 3, 2016. A systematic review of literature for quality and sources on this topic has not yet been conducted. It is hypothesized that since the “rediscovery” of the ALL, the quality of ALL-focused literature has improved and the quantity of literature available has increased.

MATERIALS AND METHODS

This study was conducted according to the methods used by Ayeni and colleagues.¹⁵ It is reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement.¹⁶

Study Eligibility

Studies meeting the following inclusion criterion were included in this review: any publication featuring all levels of evidence in a peer-reviewed journal primarily focused on the ALL, published between January 1, 2000, and December 3, 2016. This search range was chosen to capture any literature leading up, and responding to, what some investigators consider to be the “rediscovery” of the ALL in 2012 to 2013.^{1,10,14} Editorial comments, letters to the editor, instructional course lectures, studies focusing on animal anatomy, and any studies not published in English were excluded.

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