

Evidence Discussion (CMM-312)

Knee Surgery-Arthroscopic and Open Procedures: Anterolateral Ligament (ALL) Reconstruction/Lateral Extra-Articular Tenodesis (LEAT)

Risks of anterolateral ligament (ALL) reconstruction/Lateral Extra-Articular Tenodesis (LEAT) include but are not limited to failure to improve, failure to heal, graft retearing, complications related to fixation implants, neurovascular injury, infection, ecchymosis, hemarthrosis, deep venous thrombosis, pulmonary embolism, and death, as well as complications related to risks of general and local anesthesia. [1, 9]

Given the potential possibility for significant complications, proper patient selection is crucial to optimize the risk-benefit ratio.

Symptoms of anterolateral ligament injury / tear often occur in conjunction with anterior cruciate ligament (ACL) injury and may include pain as well as instability, mechanical symptoms such as blocked range of motion, weakness/giving way or buckling of the knee, or painful locking/clicking/catching/popping during weight-bearing activities. Supportive exam findings include joint effusion/ hemarthrosis, positive instability tests (Lachman, anterior drawer, pivot-shift), reduced range of motion and joint line tenderness. [2, 10]

ACL injuries often occur with concomitant meniscal tears (42%), ligament sprains (30% MCL), bone marrow contusions, articular chondral injuries and intra-articular fractures. Imaging via MRI or CT arthrogram may be helpful in identifying the extent of injury and should confirm a tear/disruption or significant laxity of the ACL that corresponds to the patient's symptoms and physical examination. [3]

It has been shown that many patients may improve with a course of conservative care and this may very well obviate the need for surgical treatment. [4] Rehabilitation as the first-line treatment, based on evidence from prospective studies, is not associated with increased joint injury as compared to management with early ACL reconstruction. [5] Meta-analysis suggests timing of ACL reconstructive surgery may not influence functional outcomes and postoperative complications. [6]

Low-demand patients with reduced ACL laxity or athletes not involved in sports requiring cutting/pivoting activities, or partial ACL tears without instability may be managed without surgery. [11] Operative management may be indicated in younger patients or high-demand athletes in order to anatomically reconstruct the ACL to lessen the chance of secondary meniscal or chondral injuries due to ongoing instability. [11] Surgical augmentation of the ALL may offer benefit in providing additional anterolateral rotatory instability for surgical indications including ACL revision, high-grade pivot shift test, chronic ACL rupture, young patients, pivoting activities, and patients undergoing medial meniscus repair. [7] In combination with ACL reconstruction, ALL reconstruction may result in lower graft failure rates and improved patient-reported outcomes. [8]

As risk for major complications exists, symptoms, physical exam findings and imaging findings should support surgical intervention. Although the use of any coverage criteria includes the possible risk of delayed care, EviCore firmly believes the benefits of our

evidence-based criteria best ensure patient safety and highly outweigh any clinical harms.

1. Thaunat M, Clowez G, Saithna A, Cavalier M, Choudja E, Vieira TD, Fayard JM, Sonnery-Cottet B. Reoperation Rates After Combined Anterior Cruciate Ligament and Anterolateral Ligament Reconstruction: A Series of 548 Patients From the SANTI Study Group With a Minimum Follow-up of 2 Years. *Am J Sports Med*. 2017 Sep;45(11):2569-2577.
2. Huang W, Zhang Y, Yao Z, Ma L. Clinical examination of anterior cruciate ligament rupture: a systematic review and meta-analysis. *Acta Orthop Traumatol Turc*. 2016;50(1):22-31.
3. Filbay SR, Grindem H. Evidence-based recommendations for the management of anterior cruciate ligament (ACL) rupture. *Best Pract Res Clin Rheumatol*. 2019 Feb;33(1):33-47. doi: 10.1016/j.berh.2019.01.018. Epub 2019 Feb 21. PMID: 31431274; PMCID: PMC6723618.
4. Jones BQ, Covey CJ, Sineath MH Jr. Nonsurgical Management of Knee Pain in Adults. *Am Fam Physician*. 2015 Nov 15;92(10):875-83.
5. Filbay S.R. Early ACL reconstruction is required to prevent additional knee injury: a misconception not supported by high-quality evidence. *Br J Sports Med*. 2018
6. Shen X, Liu T, Xu S, Chen B, Tang X, Xiao J, Qin Y. Optimal Timing of Anterior Cruciate Ligament Reconstruction in Patients With Anterior Cruciate Ligament Tear: A Systematic Review and Meta-analysis. *JAMA Netw Open*. 2022 Nov 1;5(11):e2242742.
7. Sonnery-Cottet B, Vieira TD, Ouanezar H. Anterolateral Ligament of the Knee: Diagnosis, Indications, Technique, Outcomes. *Arthroscopy*. 2019 Feb;35(2):302-303.
8. Littlefield CP, Belk JW, Houck DA, Kraeutler MJ, LaPrade RF, Chahla J, McCarty EC. The Anterolateral Ligament of the Knee: An Updated Systematic Review of Anatomy, Biomechanics, and Clinical Outcomes. *Arthroscopy*. 2021 May;37(5):1654-1666. doi: 10.1016/j.arthro.2020.12.190. Epub 2020 Dec 17. PMID: 33340678.
9. Madhan AS, Ganley TJ, McKay SD, Pandya NK, Patel NM. Trends in Anterolateral Ligament Reconstruction and Lateral Extra-articular Tenodesis With ACL Reconstruction in Children and Adolescents. *Orthop J Sports Med*. 2022 Apr 6;10(4):23259671221088049.
10. Kantrowitz DE, Colvin A. Comprehensive Clinical Examination of ACL Injuries. *Clin Sports Med*. 2024 Jul;43(3):311-330.
11. Jadidi S, Lee AD, Pierko EJ, Choi H, Jones NS. Non-operative Management of Acute Knee Injuries. *Curr Rev Musculoskelet Med*. 2024 Jan;17(1):1-13.