ISAKOS

International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine

12th Biennial ISAKOS Congress • May 12-16, 2019 • Cancun, Mexico

Paper #170

Extra-Articular Augmentation of ACL Reconstruction

Begad H. M. Z. Abdelrazek, MD, UNITED KINGDOM
Ahmed Abdelaziz, PhD(Orth), MSc(Orth), EGYPT
Ahmed M. Gad, MD, EGYPT
Mahmoud A. Abdelaziz, BSc, MSc, MD, EGYPT
A. Samir El-Kalyoby, MD, EGYPT
Mahmoud Y. A. Tolba, MD, EGYPT

Faculty of Medicine Cairo University
Giza, EGYPT

Summary:
Combined ACL reconstruction provides good rotational control. Different technique have not shown superiority over one another.

Abstract:

Background

Initially Extra-articular reconstruction was performed as a single procedure in treatment of ACL deficiency. It was widely replaced by Intra-articular reconstruction. Several modifications of intra-articular reconstructions were made aiming to restore knee kinematics, stability and function, until anatomic single bundle (ASB) reconstruction became the standard of care. Yet, surgeons noticed residual laxity with a pivot shift in up to quarter of ACL reconstructed knees. This was explained by torn anterolateral capsular structures which act as secondary stabilizers to rotary movements. Extra-articular procedures were re-introduced in addition to intra-articular reconstruction in a select group of patients. Several techniques have been described, from the classic modified Macintosh to more recent anterolateral ligament (ALL) and finally artificial ligament augmentation. Cadaveric studies compared ALL and ITB, there was no consensus as to which structure is most important for rotational stability. Patients and methods: from January 2014 until July 2016 a randomized controlled trial on 200 patients who required ACL reconstruction with an added extra-articular procedure. We included patients with grade 3 knee jerk, high demand athletes and revision cases. In all cases ASB technique was used for ACL reconstruction. Patients were allocated to 2 groups, 100 patients underwent ACL plus ALL reconstruction (group A) and another 100 patients were treated with ACL reconstruction plus ilio-tibial band (ITB) tenodesis (group B). ITB was tied over itself in 30 patients (B1), fixed with bio-tenodesis screw in 30 patients (B2) and fixed with a staple in the remaining 40 (B3). All patients were evaluated using the Lysholm, objective IKDC knee scores, Taegner activity score and KT-1000 instrumented Lachman pre and post-operatively. All patients followed the accelerated rehabilitation program. Results there was no statistically significant difference between both groups regarding Taegner activity score, Lysholm score, returning to the pre-activity level. Although there was more residual AP laxity in group 'A', this was not statistically significant. There was one traumatic re-rupture in group A, but none in group B. Again this was not statistically significant. B1 patients had significantly more lateral discomfort and pain as compared to B2, 3 and group A. There were two cases of tunnel blow-out in group A, one case in group B2. Conclusion: Extra-articular augmentation provides rotational stability for patients with gross laxity. ITB tenodesis preserves the Gracilis for larger diameter ACL graft, less time consuming, involves fewer tunnels and no risk of tunnel collision especially if no tenodesis screw is used, less implants are used as compared to ALL reconstruction, hence lower cost . However, the latter offers less overtightening of the lateral compartment, less bulkiness and lateral pain. It is also considered anatomic procedure. No clinically significant superior results were demonstrated using one extra-articular procedure over the other. This study relied on pivot shift test in assesment of stability. However, objective analysis of rotational knee kinematics is required to determine the superiority of one technique over the other in conferring rotational stability.