Dr. Alan Getgood

"Anterolateral augmentation of ACL Reconstruction"

Although anterior cruciate ligament reconstruction (ACLR) can be very successful in returning athletes back to their pre-injury function, we observe an unacceptably high failure rate in young active individuals. In patients less than 25 years old returning to contact pivoting sports, studies have demonstrated that up to 20% may suffer from an ACL re-injury, with a further 10% having an injury to their other knee (Webster et al., AJSM 2016). Numerus surgical methods have been developed over the past number of decades in an attempt to reduce persistent instability and ACLR failure.

In 2012/13 the anterolateral ligament (ALL) of the lateral side of the knee was described (somewhat controversially) as being a key structure that is involved in controlling knee instability following ACL injury. This led to many surgeons proposing that a lateral procedure, such as an ALL reconstruction or lateral extra-articular tenodesis (LET), as an augment to ACLR, would be successful in providing better results following surgery. However, it was evident that research was missing to show the safety of these procedures and whether or not they worked.

To address this deficiency, I developed a program of research that included anatomical, biomechanical and clinical studies to help determine if adding a lateral augmentation to standard ACLR techniques would improve results and ultimately help our patients reduce their risk of re-injury. The first paper included in the Samson award was an anatomic study that investigated the anterolateral ligament. Using information form this work, we were able to perform a biomechanics study that tested the mechanical behaviour of these structures, showing that an LET was more effective at controlling knee stability. A third paper reviewed past literature and determined that a clinical trial was required to fully understand whether a lateral augmentation would be helpful. The last two papers describe the results of the Stability Study, a multicenter randomized clinical trial comparing ACLR with or without LET in young patients at high risk of re-injury. Following the recruitment and randomization of 618 patients (largest ever RCT performed in the history of ACLR) with a mean age of 19 years old, we found that the addition of LET resulted in a 66% reduction in graft failure at 2 years post-operative. Importantly, there were no clinically important differences found between groups in terms of functional performance indicating that LET was a safe procedure to use in this patient population.

I am extremely grateful to the Canadian Orthopaedic Foundation for recognizing this work as worthy of receipt of the J Edouard Samson Award. The funds will be used to further our understanding of ACLR outcomes in our young patients. I am also extremely grateful to all my collaborators at Western and members of the Stability Study Group, without whom this work would not have been possible.