

Contemporary ACL Surgery

Welcome to the Orthopedic Techniques in Sports Medicine focus issue on contemporary techniques for ACL reconstruction. As frequently cited in the introductory paragraphs of most ACL focused manuscripts, ACL reconstruction remains among the most common procedures in orthopedic surgery. Fortunately, multiple authors have demonstrated successful short term outcomes following ACL reconstruction using a variety of techniques. However, considerable controversy remains with regard to long term functional outcome, subsequent risk of re-tear, meniscus or cartilage injury, and ultimately, development of arthritis. To this end, there has been continued evolution of techniques to improve patient outcomes.

In the past decade, surgeons have revisited the anatomical structure of the native anterior cruciate ligament in order to better understand normal anatomy from a surgical reconstruction perspective. Understanding the structure, function and footprint position on the native ACL is critical to proper tunnel and graft placement during ACL reconstruction. Better understanding of the normal ACL femoral footprint, particularly in the flexed knee position commonly used during surgical reconstruction, has led to alternate techniques for femoral tunnel creation. The hallmark of most techniques has been the ability to “uncouple” femoral and tibial tunnel drilling such that both tunnels can be placed independently in an anatomic location as dictated by patient anatomy. However, traditional transtibial drilling maintains some technical advantages and is familiar to most surgeons, and thereby some authors, including work from my institution, have focused on refining the current technique to allow more anatomic tunnel placement.

The past decade has also seen an expansion in the use of allografts for ACL reconstruction. Allografts clearly offer an enticing option for ACL reconstruction with elimination of graft harvest morbidity, shorter surgical times, and a potential for quicker patient recovery. However cost, availability of tissue and potential risk of disease transmission remain a concern. In addition, the biologic process of allograft “liga-

mentation” specifically in comparison to autografts remains largely unknown. In addition, multiple associated factors such as allograft type, donor age, recipient age and activity level, and fixation type complicate the ability to evaluate allograft outcomes for comparison. Recent data, however, has suggested that caution is in order in regard to routine use of allografts for ACL reconstruction particularly in the young active patient population.

This issue brings together thought leaders in ACL surgery to report their personal techniques for ACL reconstruction, many of which were developed and refined in their own hands. We begin with a review of ACL anatomy providing a clinically relevant discussion of anatomical principles used during surgical reconstruction. Contemporary graft choices are reviewed. Multiple techniques are presented including anatomic transtibial, anteromedial approach with a curved guide and flexible reamer, two incision technique, all-inside reconstruction and finally double bundle reconstruction. Revision options are discussed. Finally a review of contemporary outcomes is presented with available data to support emerging techniques.

As we move forward in exploring alternate techniques for ACL reconstruction, we must bear in mind that medicine today is an evidence based science. Although many contemporary techniques have demonstrated a reproducible ability to recreate ACL anatomy or biomechanical function at time equals zero, most have failed to demonstrate significant improvement in patient based outcomes including function and satisfaction. In addition, none have long term data to demonstrate decreased risk of subsequent meniscal injury, chondral injury or long term development of arthritis. In this regard, continued study is necessary to determine the graft options and techniques that provide the best short term and long term functional outcomes for our patients.

Nikhil N. Verma, MD
Guest Editor