



QUESTION | WHAT'S NEW IN ACL RECONSTRUCTION - AN UPDATE FROM ISAKOS 2019

ANSWER | The ISAKOS biannual meeting (International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine) is one of the few meetings that provides both a European and American perspective on surgery and rehabilitation. Things are often done very differently on the 2 continents and this meeting provides a nice balance, often showing both points of view.

Quadriceps tendon:

In recent times there has been great enthusiasm to use the quadriceps tendon for ACL reconstruction. Donor site morbidity seems less than both hamstring tendon harvest and middle third patella tendon harvest. The graft size and shape mimic the native ACL and the equipment to facilitate graft harvest has improved where the graft can be reliably harvested. Fixation can be achieved using either bone or soft tissue methods. The new kid on the block was looking very promising and is good to use from the perspective of the surgeon.

Unfortunately the results from the Danish ACL registry show a significantly higher (more than double) re-rupture rate of Quadriceps grafts compared to other autografts. This tells us that we need to be very cautious switching away from traditional grafts and at this stage the quadriceps tendon should be studied more closely and not used universally for ACL reconstruction.

To some extent we learned the same lesson when we changed away from patella tendon to hamstring tendon reconstructions for all cases. The re-rupture rate for hamstrings was higher in high level soccer players and in younger females. Hamstring harvest is also not as benign as what it was said to be with many people experiencing ongoing pain and weakness.

Allograft:

As allograft tissue has become more available use of it has increased. Recovery is certainly faster when the knee is left intact. If an allograft is to be used it should be non irradiated but again the re-rupture rates are unacceptably high in young patients. This IS a graft that should be reserved for older patients with lower functional demands or those with multi ligament injuries.

Synthetic:

Synthetic grafts are being used in some countries like China but the rest of the world has gone away from using them inside the joint. They are a reasonable option in some circumstances when used extra-articularly but if they break down inside the joint they create synovitis and arthritis and I would never allow one to be used in my knee.

Hamstring and Patella Tendon:

For most patients hamstring autografts remain the graft of choice with relatively low harvest site morbidity and good functional results. The morbidity from bone harvest using the middle third patella tendon can be massively reduced by bone grafting to the donor sites. This is something I have been doing for many years with great success and patients tend not to have anterior knee pain or trouble kneeling once the harvested bone is replaced.

Extra-capsular procedures:

If there is damage to the meniscus or stretching of other secondary restraints such as the capsule then a stiffer graft such as the middle third patella tendon is probably the best choice. This will occasionally need to be combined with an extra articular procedure such as an anterolateral ligament reconstruction or tenodesis. Certainly, in revision cases this combination is probably the most reliable.

In conclusion: there is no one 'best' graft for ACL reconstruction. The choice of graft needs to be tailored to the patient based on their work and sport requirements.

Summary:

- Most patients will do well with a hamstring tendon autograft
- Younger females, high level soccer players, 'looser' knees and perhaps those with some varus will be better off with patella tendon autograft.
- Avoid synthetics inside the knee joint.
- Non-irradiated allografts are for older/lower demand patients.
- Quadriceps grafts should not be used universally until the reason for the high failure rate in the registry is found.

Dr Doron Sher