

ACL- Reconstruction (Introduction)

Ladies and gentlemen, dear colleagues,
We have the honor to have with us prof Hans Stäubli, from Switzerland , one of the world leaders in knee surgery . So I will try to raise some questions concerning ACL-Reconstruction and I'm sure Prof Stäubli will give us the answers and also he will share his experiences with us.

A tear of an ACL is a very common injury, occurring not only during sporting activities, but also as a result of injuries of daily life. Of course is the tear of an ACL the beginning of the end of one's knee?

The indications for reconstruction of ACL were very restricted in the past, for 3 main reasons, open procedures , long hospitalization, and long immobilization in plaster. Nowadays, thanks to the developments of the industry ,it is much easier to perform such an operation with very good results.

Does this mean that the indications are expanded?

The question, which patient needs to have an operation, is still under discussion. In other words, is there any age limit, above which we don't operate ?

Among us there are a lot of surgeons ,who perform this operation. Did we ever think ,why do we operate on these patients? What are our goals by operating? Do we only offer them a stable knee for taking part in sports and daily activities?, or do we also offer them a stable knee good enough for prevention of a degenerative disease in the future? And finally what do we really achieve ?

And of course, we need to consider, when is the right time to perform the operation ? Immediately after the injury? or when the symptoms subside ? or when the patient regains the full range of motion of his injured knee? And what is our regime when we treat a professional athlete?

After this , we need to consider the surgical procedure which follows.

Which graft are we going to use?

The ideal Graft does not exist. All available grafts have their advantages and disadvantages. May be, we have to try to transplant the entire ACL-en bloc in the future.

Anyway,

This is the BPTB-Graft

Is the BPTB –Graft still considered the gold standard?

Do the hamstrings offer the same functional results as BPTB-Graft ? Or even better regarding using modern soft tissue fixation devices? What about their reaction in the joint's environments, canal widening, initial and final fixation strength? Do they continue to have the same initial strength throughout the subsequent years? Or do they decline later?

What about the other optional grafts ? Is the quadriceps graft a good choice? Is there any place for artificial grafts?

Another question is of course whether it is necessary to use specific graft for specific groups of patients, such teenagers , weightlifters, ballet dancers and so on.

And as we go further we have more questions. Where is the weak point of fixation? The femoral or the tibial side ?

Using a BPTB-graft presents little fixation problem, since use of the interference screw is widely accepted, though some surgeons prefer rigid pins.

However , the situation regarding hamstrings fixation is somewhat confusing. We have 4 types of fixation available. The interference screw suitable for soft tissue fixation, the Transfix type of fixation, with one transverse pin, the Rigid fix type with 2 transverse pins and finally the endo button technique. Which one of these techniques is better is still not decided. It is a matter of choice and experience.

The position of the graft must be isometric. Usually we use special guides, like here for the tibial side and here for the femoral side for achieving isometry. But do we really achieve isometry with these methods?

And how can we achieve isometry, when we try to replace a ligament consisting of two bundles, AM and PL bundle, twisting around each other and which change their positions as the knee extends and flexes, how can these be replaced with one single bundle graft?

And no sooner do we think we have solved most of the problems, than another question raises itself concerning the stability of the knee after ACL-Reconstruction.

We all know that a reconstructed knee with a single bundle reconstruction shows a Lachmann test, with a good and fixed end point, and a good anteroposterior translation. The pivot shift test is sometimes positive and sometimes negative. In other words the reconstructed knee is stable in anteroposterior and side to side translation. Recent publications mention that these knees are unstable in rotation.

So the concept of reconstructing both the anteromedial and posterolateral bundles by using double canals not only on the femoral but also on the tibial side becomes more and more used. Is it now the time for us to convert our single canal reconstruction to a double canal?

Or double canal means double trouble?
Like the slide here

Post operative period there are also questions, which are still in discussion. For example is the use of a Knee Brace necessary? Some surgeons don't use it any more. Others still use it for 4-6 weeks. Why do they use it? Because they don't trust the initial fixation? Or just to give the patient the feeling of more security? and what ROM is allowed? For how long? And what about weight bearing? Some surgeons allow full W.B. as tolerated, some partial W.B. for 4-6 weeks.

Finally we come to the big section of post op Rehabilitation.

What are the guide lines?

When do we send the patient for physiotherapy?

What can the patient do? And what must the patient avoid doing?

When can the patient use swimming pool?

When do we allow to the patient to start running and when to take part in a sport?

What is the role of ergo dynamic measurements? What is their real value ?

Thank you.