High tibial osteotomy and ACL reconstruction

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early/mild arthritis

stable knee

rehabilitation

arthroscopy

osteotomy

cartilage / meniscal transpl.

eventually

combined
early/mild arthritis

unstable knee

CR. Reconstr.

CR. R. + osteotomy

eventually + cartilage / meniscal transpl.
HTO advanced indications

- cartilage repair
- allograft transplantation for articular defects of the knee
- meniscal transplantation
- ligaments instability
Knee abuser

H. Dejour 1985

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35 yrs old
42 yrs old

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Ligament instability with stretch out of the lateral secondary restraints in a varus knee
HTO + ligaments instability

Symptoms

- pain + instability
- (usually after a medial meniscectomy and/or in the varus knee)

Technique

- HTO + ACL reconstruction
- HTO alone
osteotomy

**general indications:**

- 40-50 yrs
- pain with activity
- axial deformity
- unicomp. arthritis
- no patellar pain
- full ROM
why open wedge HTO

• precise
• one cut only
• intraoperative fine tuning
• no fibular osteotomy
• no muscular detachment
• preserves bone stock for a future TKR
• no medial displacement of the tibial mechanical axis
Why a combined HTO+ACL rec

• one operation
• same rehabilitation (for wbearing)

• longer procedure (± 20min)
• slower ROM
x-ray examination

Weightbearing in extension

The Rosenberg view

Stress X-rays:
- in abduction
- and in adduction

Lateral weightbearing
The purpose of the HTO is to displace the mechanical axis on weightbearing X-rays according to the amount of lateral laxity and to decrease the tibial slope.
The Tibial Slope

- angle between the medial tibial plateau and the tibial shaft
Tibial slope affects tibial translation in the cruciate deficient knee

• In the ACL deficient knee increasing the tibial slope increases translation

• In the PCL deficient knee increasing tibial slope decreases translation
we can modify the tibial slope according to the anterior or posterior knee instability
Surgical technique
HTO+ACL rec
always a pre-operative arthroscopy

A.G. 40 yrs

A.L. 39 yrs

diffuse arthritis (med-lat-ant)

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to obtain a good surgical exposure it is necessary to cut the superficial layer of the MCL
2. type of graft
3. preparation of tunnels

two ACL rec. techniques:

1. classic

2. all inside

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4. HTO

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5. graft fixation

two ACL rec. techniques:

1. classic

2. all inside
final control

two ACL rec. techniques:

1. classic

2. all inside
Osteotomy and ACL revision
Post-operative treatment

- ROM ev. brace (0-60 / 0-90 / full in three weeks)
- ev CPM
- partial weight bearing at 30-45 days*
- full weight bearing at 45-60 days *

* according to the extent of the osteotomy and to the weight of the patient
Conclusions

• treat the instability and the initial medial compartment arthrosis in one time
• do it as soon as possible
• remember the importance of the tibial slope
Osteotomy and sport
which are our indications in a professional player over 30 with symptomatic mild arthritis?
...if he/she has a stable knee eventually

- rehabilitation
- arthroscopy
- osteotomy
- cartilage / meniscal transpl.
- combined

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after an arthroscopy

we have a large # of prof. athletes over 30 yrs. who resumed and finished their career at the same level with an economical benefit
osteotomy and
Italian soccer first league

X prof. players
return to sport: 0

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...if he/she has a unstable knee

- CR. Reconstr.
- CR. R. + osteotomy
- + meniscal transpl. / cartilage

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We can obtain good results with an isolated ACL reconstruction

A stable knee has less pain/symptoms
It is hard to come back to sport at the same level due to:

change of the morfotype in the specific athletic gesture

stop of one season
in a typical varus knee of a soccer player with anterior and postero-lateral instability I prefer a complete ligament reconstruction vs an osteotomy for not changing the morphotype

A.C, 22 yrs acl+postero-lateral reconstr
grazie