

## HTO : Post operative course


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## Issues

- ✓ Analgesia
- ✓ Mobilization & weight bearing agenda
- ✓ Resume activities
- ✓ Concern procedure, bone quality & fixation

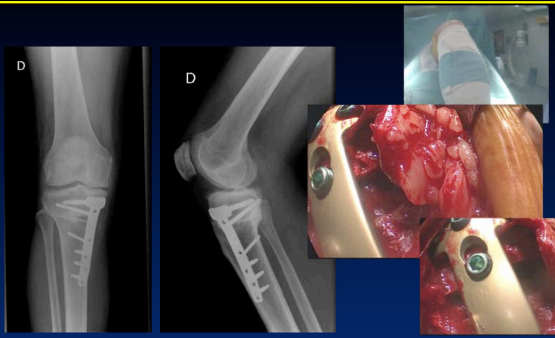


## Techniques HTO

- ✓ Medial open-wedge
  - ✓ fixed with plate (rigid or not)
  - ✓ spacer : substitute or iliac crest
- ✓ Lateral close wedge
  - ✓ fixed with non rigid plate (rigid or not)
- ✓ No ≠ in stability RCT


Lemaire Acta Ortho Belg 1982  
Hoffman CORR 1991  
Luytes JBJS 2009

## TomofIX plate Fibrin clot technique




## Flexible plate fixation Bone substitute or iliac crest

CW



OW





Flecher CORR 2006

## Other techniques

- ✓ Dome HTO
  - ✓ Bone stock intact, no patellar effect

Mac Alister Tech Kne Surg 2005
- ✓ Ilizarov EF
  - ✓ Progressive correction

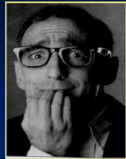
Fragomen Tech Kne Surg 2005

### Post-op regimen


#### Analgesia

No block : compartment syndrom !



### Mobilization

- ✓ Bed rest 24h
- ✓ Early motion
  - ✓ CPM as a tool
  - ✓ According to pain (physio, auto)
  - ✓ No limitation
  - ✓ Avoid flexum (!! if slope modified !!)



### Physical therapy

- ✓ Painfree
- ✓ Massage, Quad strenghtening
- ✓ Post chain stretching

J1 (FK) to J10 (JM)

### Weight bearing = stimulate healing

Noyes Am J Sport Med 2006  
Takeuchi Arthroscopy 2009

- ✓ 30% @ D 2  
splint / FK, without / JM
- ✓ 2/3 from W3 (JM) to W6 (FK)  
remove splint @ walk
- ✓ Full WB from W6 (JM) to W10 (FK)

cycling & swimming by W6

### Early WB

Medial Opening Wedge High Tibial Osteotomy With Early Full Weight Bearing


Ryoshei Takeuchi, M.D., Hayashi Iihikawa, M.D., Masato Aratake, M.D., Hanhiko Bito, M.D., Izumi Saito, M.D., Ken Komaga, M.D., Yasuhiko Akamatsu, M.D., and Tomoyuki Saito, M.D.

- ✓ n=52 patients
- ✓ TomoFix +  $\beta$ -TCP wedge
- ✓ Partial WB at one week
- ✓ Full weight bearing at 2 weeks
- ✓ No non-union, no implant failure, no loss of correction

### Peoperative problems


- ✓ Articular fracture Amendola J Surg 2004  
not so important

The Swiss says: Well...

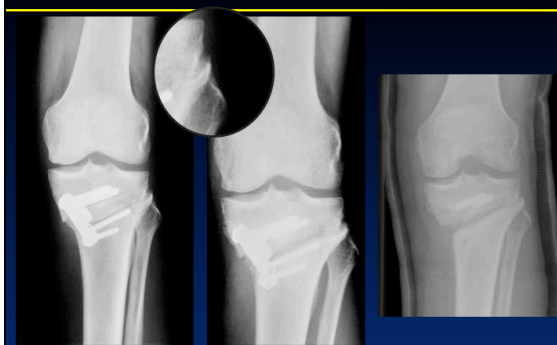


Controlateral cortex disruption

### Key points

- ✓ Solid lateral and medial columns (plate and hinge) Noyes Am J Sport Med 2006
- ✓ Pay attention if bad bone quality
- ✓ Pay attention if cortical rupture
  - ✓ OW HTO = hypo correction
  - ✓ CW HTO = hyper correction
- ✓ What about articular surface 

### Bad technique/non-compliant patient

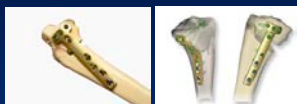


### Material issue?

- ✓ Load rupture 220 to 240 Kg Dorsey J Arthroplasty 2006



- ✓ Fixation OW: TomoFix has better stability than Puddu plate



Stoffel Clin Biomec 2004  
Spahn et al Clin Biomec 2006  
Agneskirchner et al KSSTA 2006

### Mid-term post op course

- ✓ 3 to 6 months
  - ✓ Pursue muscle reconditioning
  - ✓ Work on body scheme
  - ✓ Light impact & pursue cycling
- ✓ Sport activities
  - ✓ Swimming: 6 weeks
  - ✓ Cycling/MTT: 6 weeks
  - ✓ Hiking (easy): 8-12 weeks
  - ✓ Golf: 4 months
  - ✓ Tennis: 6 months
  - ✓ Alpine skiing: 6 months if muscle recovered

### Take home message

- ✓ Post-op regimen depends upon:
  - ✓ Quality of bone
  - ✓ Type of fixation
  - ✓ Procedures
  - ✓ Unharmed lateral hinge
- ✓ Early WB can be allowed after a proper surgical procedure