Patella baja= difficult primary TKR?

Nicolas PUJOL, Philippe BEAUFILS
Orthopedic Department
Centre Hospitalier de Versailles
France
npujol@ch-versailles.fr

Potential difficulties before TKR
- Axis
- Slope
- Stiffness
- Patella baja
- Ligaments...
- Bone
- Skin
- Problem for Surgical exposure?
- Inversion/lateralisation of the patella

Patella baja
- Risk factors of patella baja:
  - Surgery++++
  - HTO
  - Fracture
  - Chronic Quad tendon rupture

What is called a patella baja/infera?
- Index
  - Caton-Deschamps <0.6
  - Blackburne-Peel <0.54
  - Insall-Salvatti < 0.8
- Different measurements! Lot of controversies

What is it?
- Index
  - Caton-Deschamps 1977
  - Depends on translation if malunion (HTO)
- Different measurements!
What is it?
- Index
- Blackburne-Peel 1977
- Tibial slope
- …
- Different measurements!

What is it?
- Index
- Insall-Salvati 1971
- Depends patellar tendon length++
- …
- Different measurements!

Is it important before TKR?
- Take clinical examination (stiffness) and patellar height
- IF Loss of flexion (90°-100°)
- AND Patella baja
- ⇒ Be careful!
- Highest risk= patellar tendon avulsion
- Rand JA Clin Orthop 1989

How to manage?
- Soft tissue procedures:
  (Release of the tendon, resection of the fatpad, quad releases…)
- Bone Tibial tubercle

Quad Turn down
- VY
- Weaken extensor mechanism
- Delay rehabilitation

Rectus Snip
- 1943 Coonse and Adams
- 80’s Insall (1984-95)
- Garvin Clin Orthop 1995: the evolution of the quadriceps snip
- Trousdale Clin Orthop 1993
- Hsu J Arthroplasty 2012
- Controversy … Good/Poor results?
Medial approach quad release

- Tarabichi S J Arthroplasty 2010
- Stiff knees
- Patella baja
- Complete resection of the suprapatellar adhesions
- Gain of motion 34°

ATT Osteotomy

- Dolin JBJS 1983
- Whiteside Clin Orthop 1990
- Friedrich N Oper Orthop 1999
- Quad muscle preserved
- Avoid patellar tendon avulsion
- Vascular supply patella
- Bone healing

ATTO: Indications

- Patella Baja, short patellar tendon
- Loss of knee flexion: stiffness++
- Patellar subluxation +/-

Debette C Servien E Nuyet P Int Orthop 2014
TKR and Stiff knee n=300
ATT Osteotomy in 8% knees

Technical key points

- >7cm
- Thickness 1cm
- Width 2cm
- Self locking
- Height: raise the patella?
- No Need for Stem
- 2 bicortical screws

Results ATTO and TKR

- N=113
- ATT fracture 2.38%
- Wound problems 3.18%
- Stiffness 4%

Piedade, Servien The Knee 2008

Results

- ROM: 73° ±34.9 to 88 ± 21.1 (mean gain of 15 ±23.1)
- 3/20 fractures conservatively treated

Tabutin Orthop Traumatol Surg Res 2011
Take Home Message

- Think about ATT osteotomy (10% stiff knees)
- In difficult knees
- With patella infera
- And peroperative problems to mobilise patella despite soft tissue releases

- Safe, reproducible
- Frequent minor complications
- Few major complications