

Patella baja= difficult primary TKR?

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- The authors declared no conflicts of interest for this presentation.



Potential difficulties before TKR

- Axis
- Slope
- Stiffness
- Patella baja
- Ligaments...
- Bone
- Skin
- Problem for Surgical exposure?
- Eversion/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-Salvati < 0.8
- ...
- Different measurements! Lot of controversies

Knee Surg Sports Traumatol Arthrosc (2009) 13:539–544
DOI 10.1007/s00381-008-0573-y

KNEE

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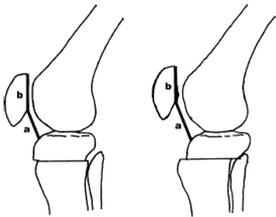
Evaluation of patellar height and measurement methods after valgus high tibial osteotomy

ISI (range)	1.05 (SD: 0.10) (0.83–1.39)
BPI (range)	0.80 (SD: 0.13) (0.60–1.23)
CI (range)	0.91 (SD: 0.14) (0.60–1.45)



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

Campbell Orthop clin north am 1998

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°

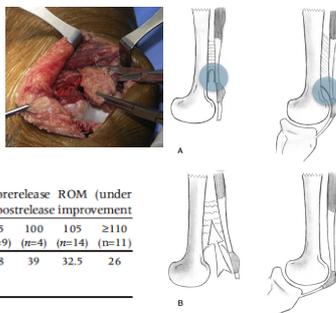
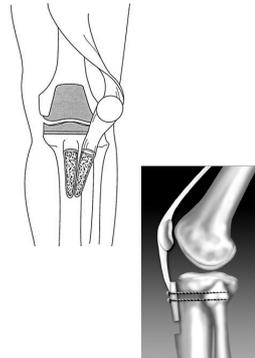


Table 1. Shown are the measured prerelease ROM (under anesthesia) and the average immediate postrelease improvement

Prerelease ROM (range) (°)	85 (n=2)	90 (n=2)	95 (n=9)	100 (n=4)	105 (n=14)	≥110 (n=11)
Post-release improvement (average, in degrees)	55	40	38	39	32.5	26

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



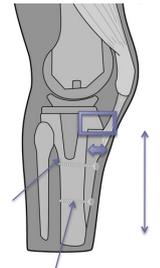
ATTO : Indications

- Patella Baja, short patellar tendon
- Loss of knee flexion: stiffness++
- Patellar subluxation +/-
- Debette C Servien E Neyret 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



Young J Arthroplasty 2008
Whiteside LA Clin Orthop 1990

Results ATTO and TKR

Pre- and postoperative mean knee and function IKS scores					
IKS SCORE		Group A	Group B	p<0.05*	
Knee score	Preoperative	45	44	NS (p=0.81)	
	Postoperative	91	91	NS (p=0.84)	
Function score	Preoperative	54	54	NS (p=0.84)	
	Postoperative	78	74	NS (p=0.00)	

- 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

