



8th Advanced Course on
Knee Surgery



UNSTABLE TKA

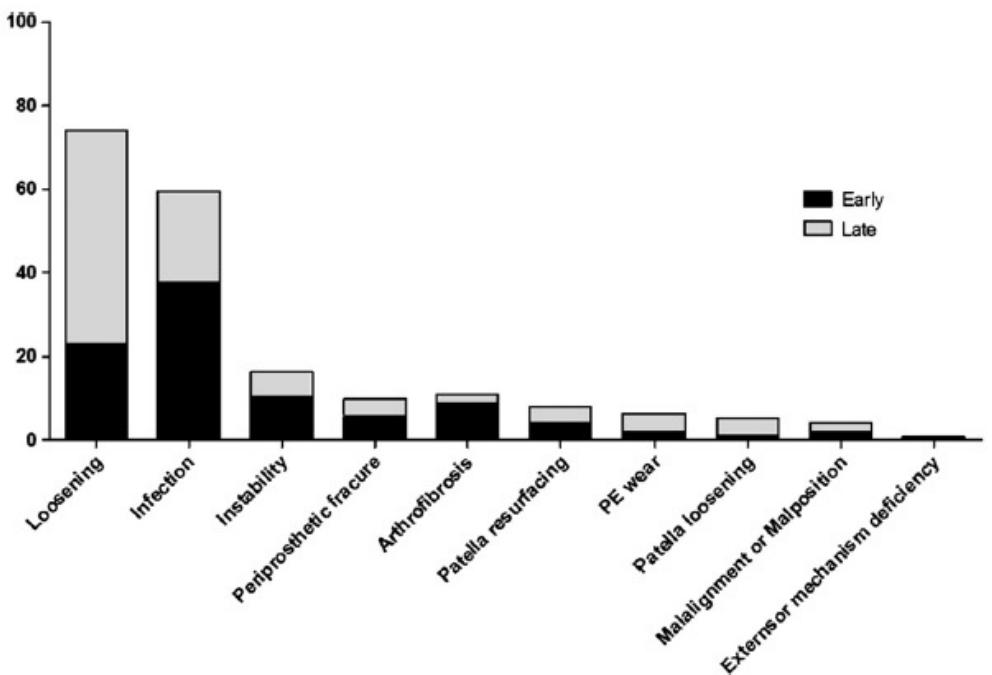
How to assess it ?

Dr Nicolas GRAVELEAU & Dr Simon PELLETIER
Bordeaux-Mérignac



UNSTABLE TKA : is it frequent ?

- 7,5% of 781 TKA revisions
- Third cause of TKA revision
- After loosening and infection
- **Decreasing incidence**



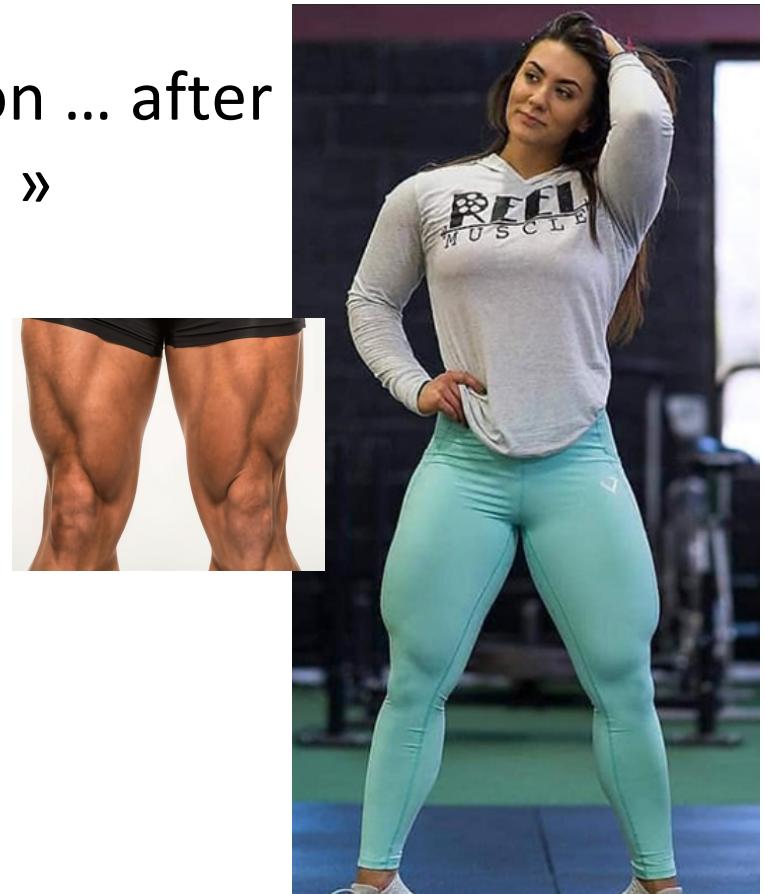
Is it really an unstable knee ?

- Can be difficult to diagnosis / assess
- From the frank dislocation to **non specific symptoms**
 - Pain
 - tenderness in soft tissues
 - sense of instability without giving way
 - swelling



Is it really an unstable (prosthetic) knee ?

- Quadriceps should be in good condition ... after surgery & rehabilitation ... « instability »
 - Long history of arthritis
 - age
 - Recovery after surgery
 - Rehabilitation of the quadriceps
 - Quality of patellar tracking



Is it only an unstable knee ?

- Always exclude **infection** as primary cause of failure
- Wound complications ?
- Knee puncture, culture, synovial white blood cells count
- Erythrocyte sedimentation rate, CRP



Parvizi Jet al. New definition for periprosthetic joint infection: from the Workgroup of the Musculoskeletal Infection Society. Clin Orthop Relat Res. 2011 Nov

Is this unstable knee a lax knee ?

- Medical exam
- In extension and different degrees of flexion (patient sitting on the table)
 - Drawers
 - Varus-Valgus constraints
- Gait exam: decoaptation (extension laxity)
- Hip exam: limb rotation

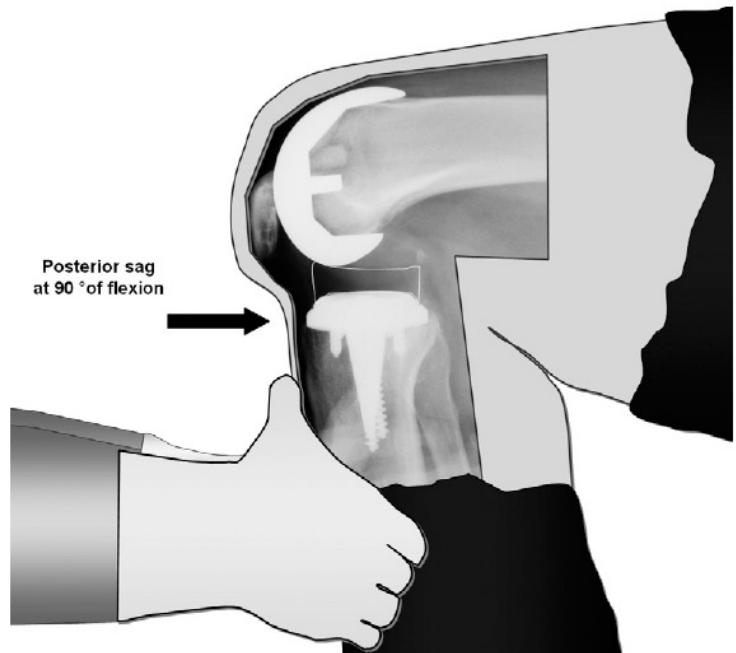


Fig. 6-B

On the lateral radiograph, the femur can be subluxated posteriorly beyond the anterior lip of the tibial insert.

Imaging

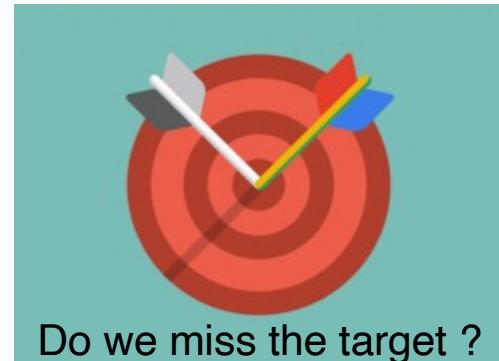
- **Always Xrays +++**
 - Antero-posterior (implant position/ orientation and size)
 - Lateral (subluxation, implant position and size, tibial slope) in different degrees of flexion
 - Patellar views
 - Full lenght weight bearing (residual deformity, bone morphology)
 - Varus/Valgus stresses (coronal laxity)
- **CT scans**
 - To asses implants **rotation** when suspected



Demey.G :Quel bilan en cas d'instabilité fémoro-patellaire après prothèse totale de genou ? Maitrise Orthopédique. 2008

Medical file datas

- Always assess HISTORY +++
- Preoperative imaging
 - Bone deformity, laxity
- Operative report
 - Prosthesis design, approach, bone cuts, soft tissues release
- Immediate post operative imaging (evolution of disease)
 - Deformity correction, residual laxity



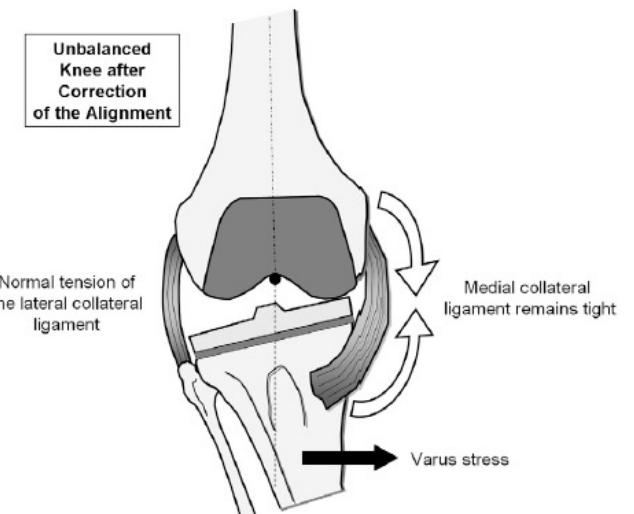
Laxity/ies classification

- According to the delay:
 - Early post-operative (*failed target*)
 - Delayed
- According to the **mechanism**:
 - Extension (symetrical or asymmetric laxity)
 - Flexion (symetrical or asymmetric laxity)
 - Recurvatum
 - Femoropatellar !



Causes

- Symmetrical in extension:
 - Overresection in distal femur or tibia cuts
- Asymmetric in extension:
 - Failure in gap balancing
 - No concavity release
 - Concavity contracture
 - Convexity laxity
- Symmetrical in flexion:
 - Underresection in distal femur with soft tissue balancing
 - decrease of posterior condylar offset (too small femur implant)

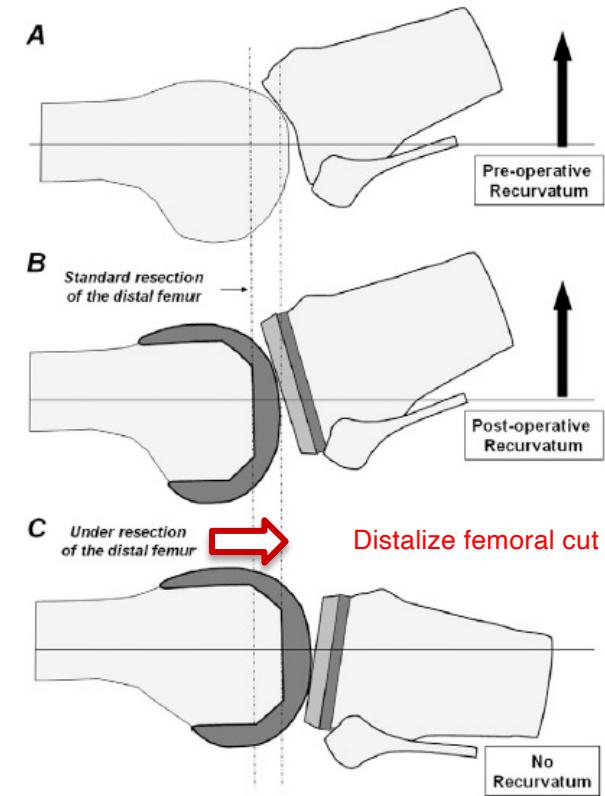


Causes

- Symmetrical in flexion:
 - Underresection in distal femur + soft tissue balancing
 - Decrease of posterior condylar offset (too small femoral component implanted)
- Asymmetric in flexion:
 - Femoral rotation
 - Gap balancing

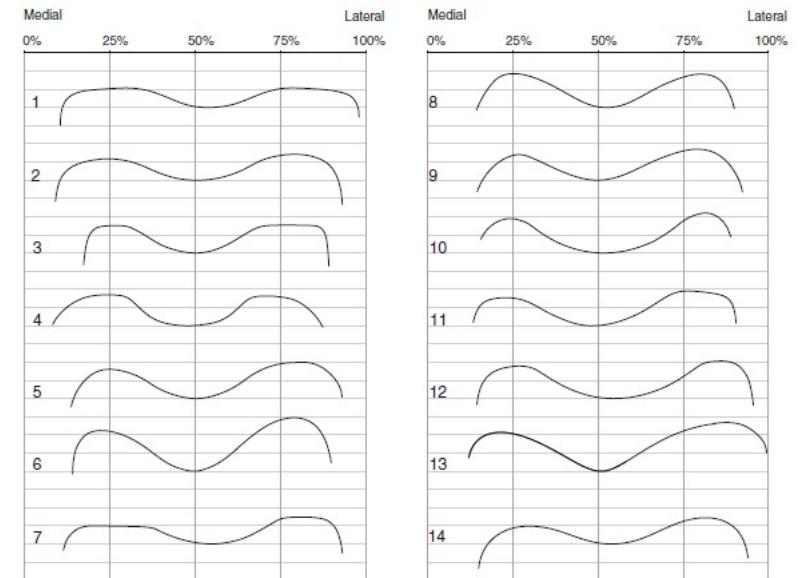
Recurvatum

- Often patient with **preoperative recurvatum** but <1 % TKA
- Be carefull preoperatively in special patients:
 - Poliomyelitis or extensor weakness : walk in hyperextension to stabilized the knee during gait
 - Rheumatoid arthritis: global laxity
 - Contracture of ilio-tibial band in valgus deformity: can pass anteriorly to the rotation center of the knee



Femoropatellar instability

- Rare cause of revision
- Always assessed with CTscan
- Same problems of patellar instability in natural knee:
 - Implants rotations (TTTG)
 - Femoral design (often trochlear dysplasia)
 - Patellar cut (patellar tilt / thickness / orientation / height)
- Failure of medial approach suture (post-operative) ?



Take home messages

- Is the unstable knee ONLY an unstable knee ? Think about sepsis : puncture ?
- Is the unstable knee a lax knee ? : Medical exam + medical imagering
- Before surgery
 - Think like the first surgeon : Medical history + preoperative and actual Xrays
 - Think like the second surgeon : Read the operative report + Scan



Parratte S, Pagnano MW. Instability after total knee arthroplasty. Instr Course Lect. 2008.

References

- Cottino U, Sculco PK, Sierra RJ, Abdel MP. Instability After Total Knee Arthroplasty. *Orthop Clin North Am.* 2016 Apr;47(2):311-6.
- Dejour D, Ntagiopoulos PG, Saffarini M. Evidence of trochlear dysplasia in femoral component designs. *Knee Surg Sports Traumatol Arthrosc.* 2014 Nov;22(11):2599-607.
- Demey.G: Maîtrise Orthopédique » Articles » Quel bilan en cas d'instabilité fémoro-patellaire après prothèse totale de genou ?
- Longo UG, Candela V, Pirato F, Hirschmann MT, Becker R, Denaro V. Midflexion instability in total knee arthroplasty: a systematic review. *Knee Surg Sports Traumatol Arthrosc.* 2021 Feb;29(2):370-380.
- Minoda Y, Nakagawa S, Sugama R, Ikawa T, Noguchi T, Hirakawa M, Nakamura H. Intraoperative assessment of midflexion laxity in total knee prosthesis. *Knee.* 2014 Aug;21(4):810-4.
- Nagle M, Glynn A. Midflexion Instability in Primary Total Knee Arthroplasty. *J Knee Surg.* 2020 May;33(5):459-465.
- Parratte S, Pagnano MW. Instability after total knee arthroplasty. *Instr Course Lect.* 2008;57:295-304.
- Petrie JR, Haidukewych GJ. Instability in total knee arthroplasty : assessment and solutions. *Bone Joint J.* 2016 Jan;98-B(1 Suppl A):116-9.
- Sharkey PF, Lichstein PM, Shen C, Tokarski AT, Parvizi J. Why are total knee arthroplasties failing today--has anything changed after 10 years? *J Arthroplasty.* 2014 Sep;29(9):1774-8.



SFA
2022
TOULOUSE
CENTRE DE CONVENTIONS
DÉCEMBRE 7/8/9/10

PRÉSIDENCE DU CONGRÈS :
OLIVIER MAY
JEAN-FRANÇOIS POTEL

COMITÉ D'ORGANISATION :
FRANCK ACCABLED, NICOLAS BONNEVIAILLE
ETIENNE CAVAGNAC, JEAN KANY,
PIERRE MANSAT, VINCENT PINEAU

SYMPOSIA

- Réparation du ménisque médial isolé sur genou stable
V.Pineau, S.Potet
- Faut-il conserver le biceps dans les réparations stade 1 du supra-épineux isolé ? *J.Berhouet, C.Chorrasset*
- Influence de l'antéversion fémorale et de l'inversion pelvienne dans le conflit fémoral-acétabulaire. *R.Coulomb, N.Keritz*

www.sofarthro.org

Science Opens the Mind

ESSKA

CONGRESS **PROGRAMME** **REGISTRATION & HOTEL** **INDUSTRY** **ESSKA**

20TH ESSKA CONGRESS
27-29 APRIL 2022
PARIS, FRANCE

The theme for the 2022 Congress is
Science Opens the Mind

[Read more](#)

Learn more about the ESSKA Congress!

20^{èmes}
Journées Lyonnaises de Chirurgie du Genou
50 years of history

LA PATELLA
22-24 SEPTEMBER 2022
LYON CONVENTION CENTER

www.lyon-knee-congress.com

Code Photo : © Ateliers d'Art Urbain - Le Ciel du Lac

Traduction simultanée Français / Anglais



SFA
2024
BORDEAUX
PALAIS 2 L'ATLANTIQUE
DÉCEMBRE 11/12/13/14

PRÉSIDENCE DU CONGRÈS :
YACINE CARLIER
NICOLAS GRAVELEAU

SYMPOSIA

- Registré instabilité antérieure de l'épaule.
Mikael CHELLI, Guillaume VILLATTE
- Reprise du sport après LCA.
Benjamin FRECHET, Camille CHOUFANI
- SMILE, Mini instabilité latérale épicondylienne du coude.
Hubert LENOIR, Patrick GOETT

www.sofarthro.org



Dr Aida ORCE , Dr Simon PELLETIER & Dr Nicolas GRAVELEAU

Bordeaux - FRANCE

Knee sport surgeon

docteurgraveleau@mac.com



MERISCIENCE

