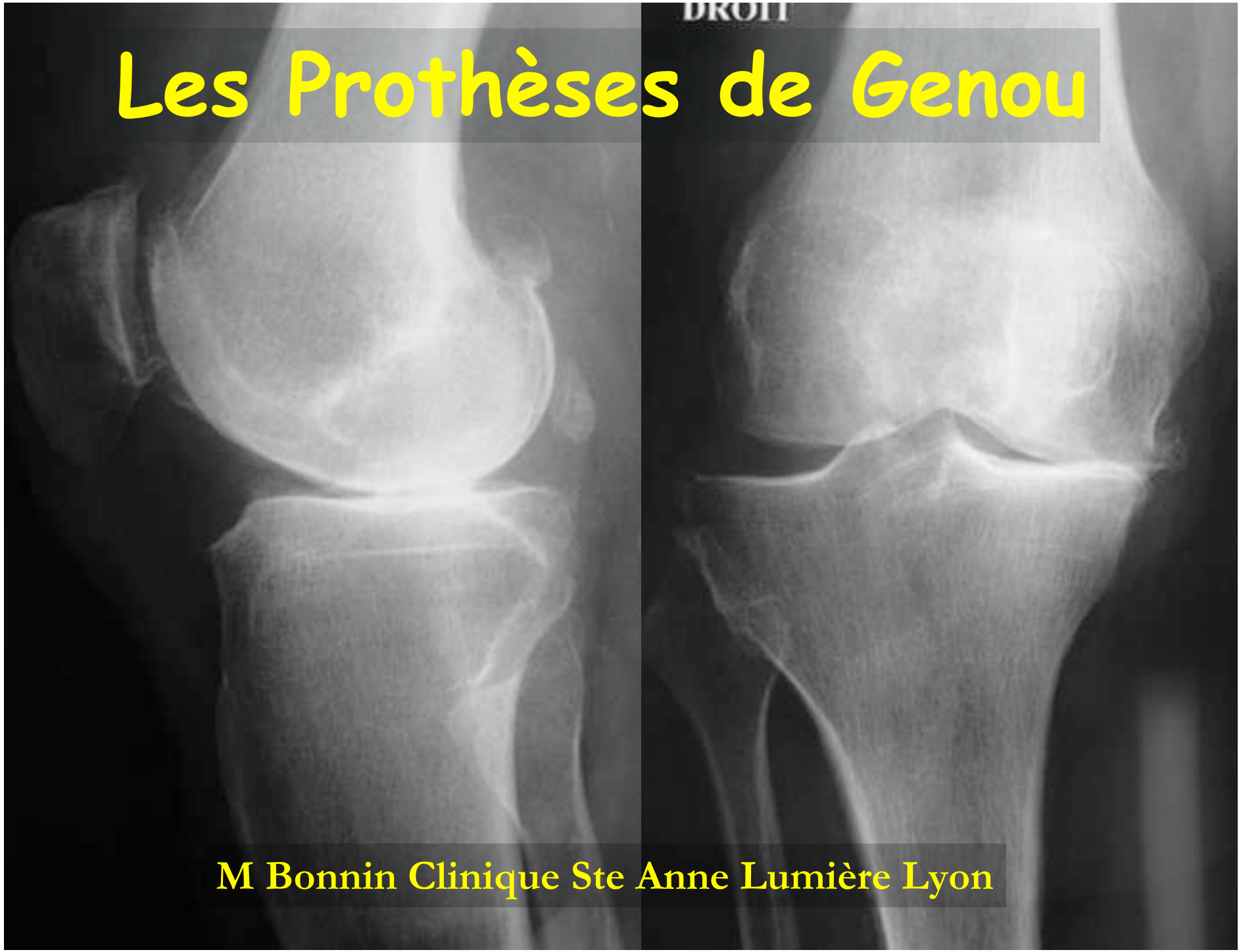
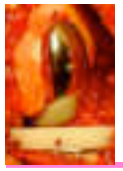
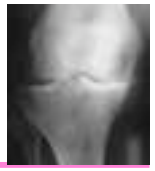


Les Prothèses de Genou

M Bonnin Clinique Ste Anne Lumière Lyon

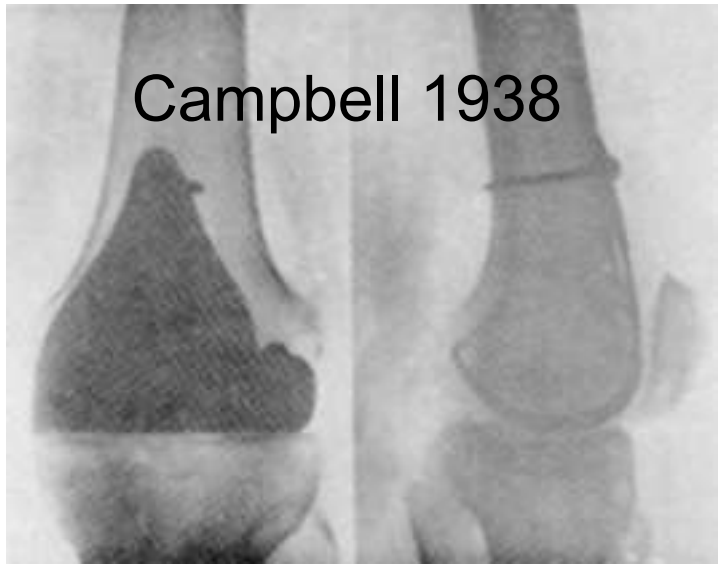


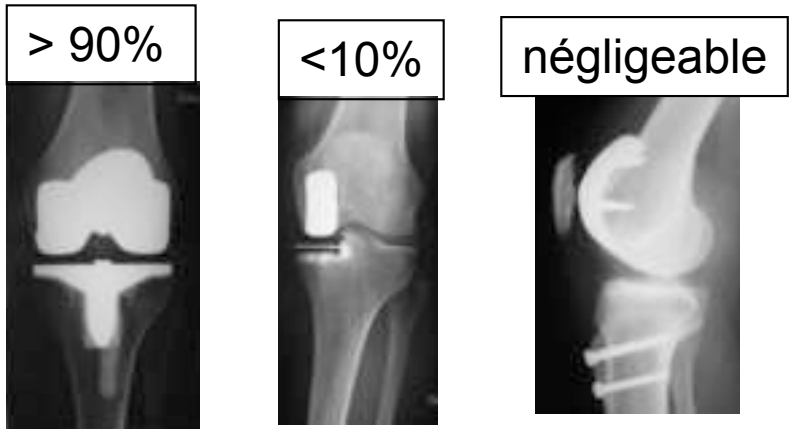
Quelle prothèse pour quel genou???



Indication = Lésion des surfaces articulaire

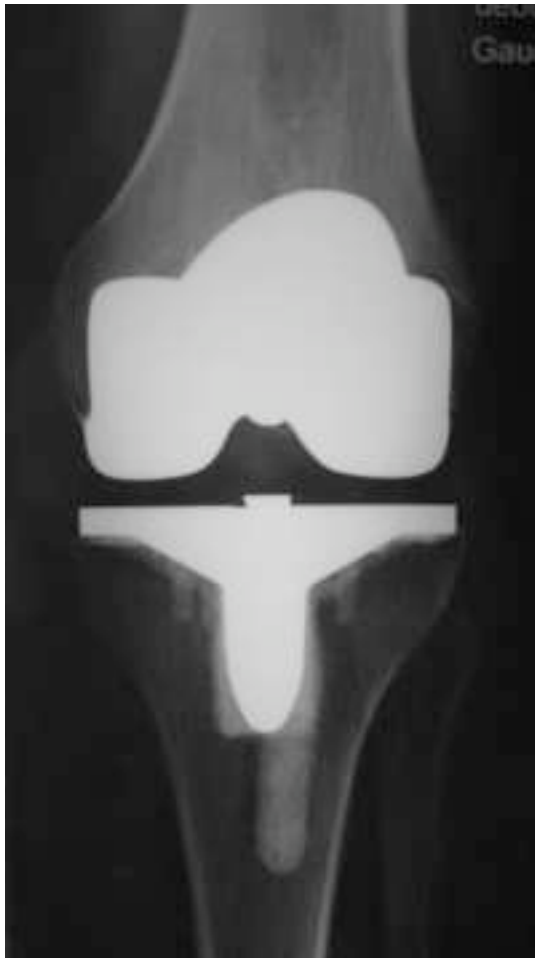
- ✓Arthrose
- ✓Rhumatisme inflammatoire
- ✓Osteonécrose
- ✓Arthropathies hémophilique
- ✓Post traumatique





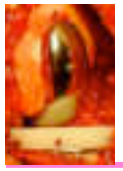
~ 350 000 PTG / an aux USA
~ 60000 PTG / an en France

Les PTG à glissement

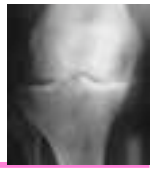


Différents types de PTG à glissement

Avant 1978: Pb: éviter la subluxation posterieure

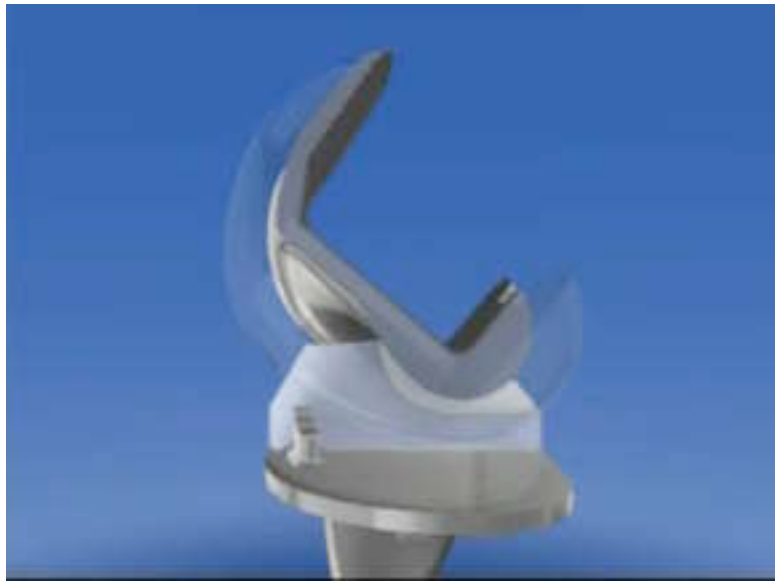


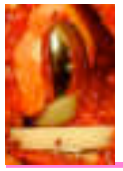
Stabilisation



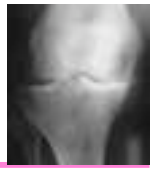
Solution N° 1: la postéro-stabilisation

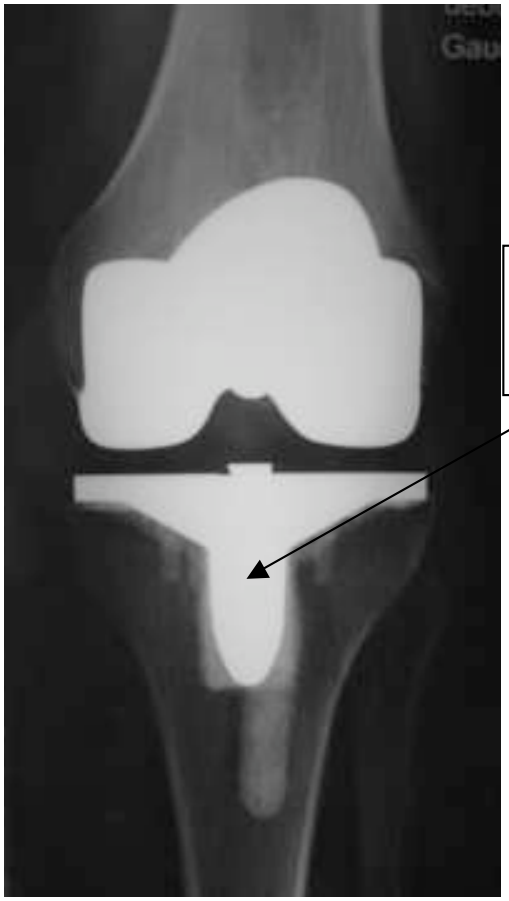
J Insall NY 1978



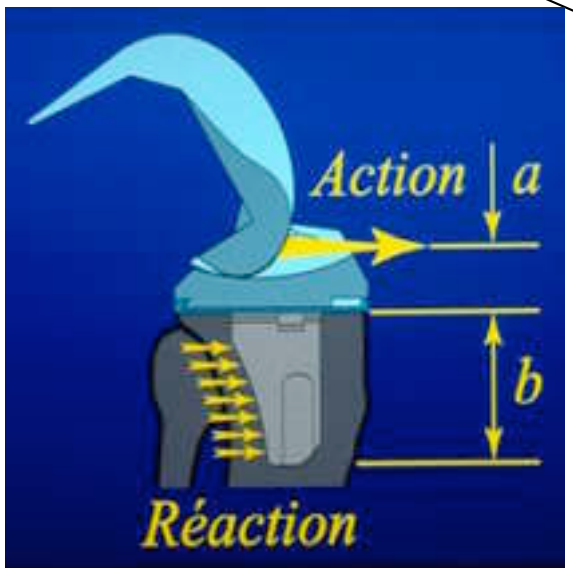


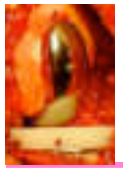
Radiographie

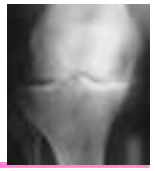




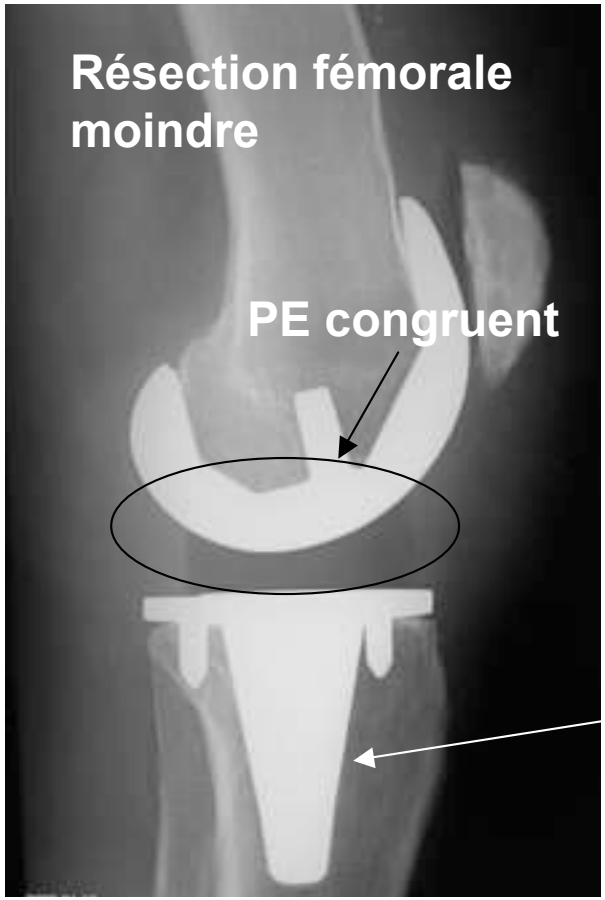
- ✓ Chambre de stabilisation
- ✓ Quille tibiale

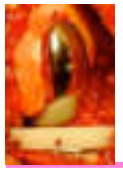




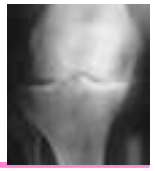


Solution N° 2: les PTG hyper congruentes

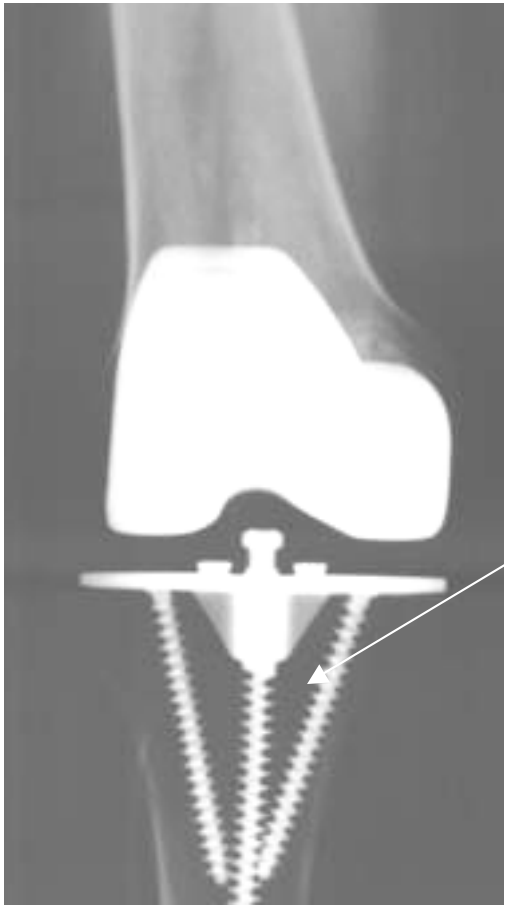




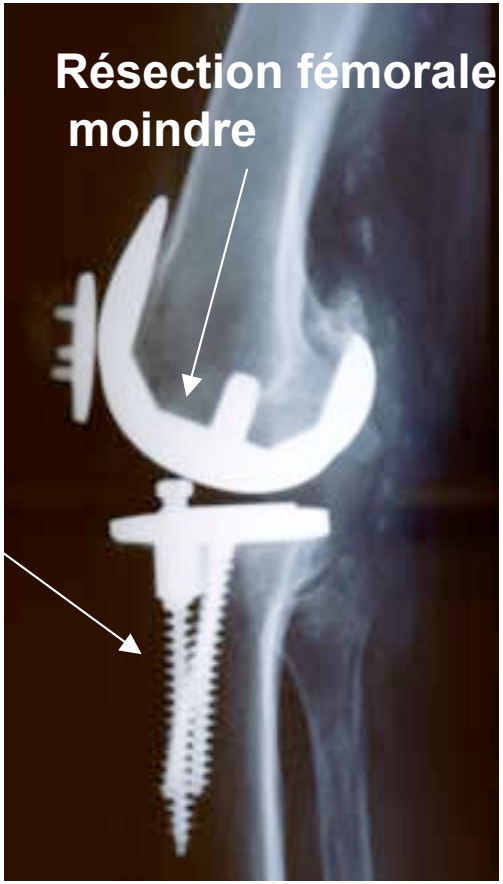
Stabilisation



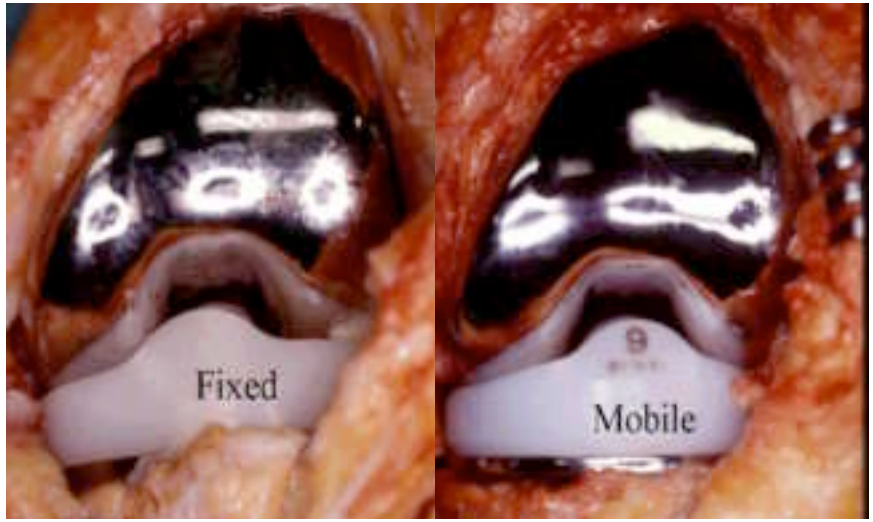
Solution N° 3: la conservation du LCP

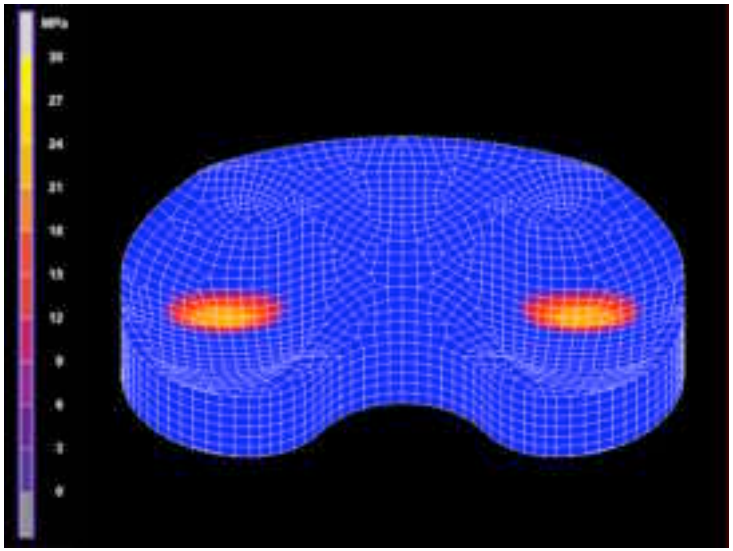


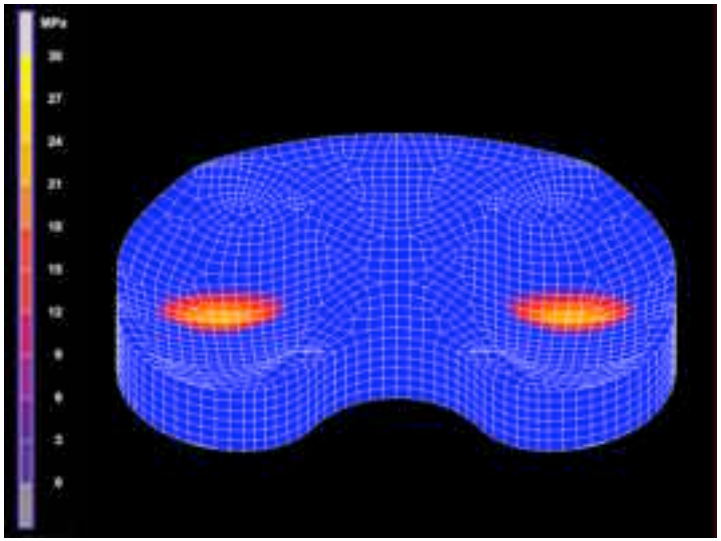
✓Pas de méca de stab
✓Pas de quille tibiale



Plateau: Fixe *versus* Mobile

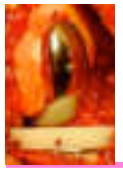




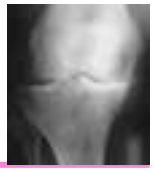


Fixe: Contact stresses increase ~ 4 times

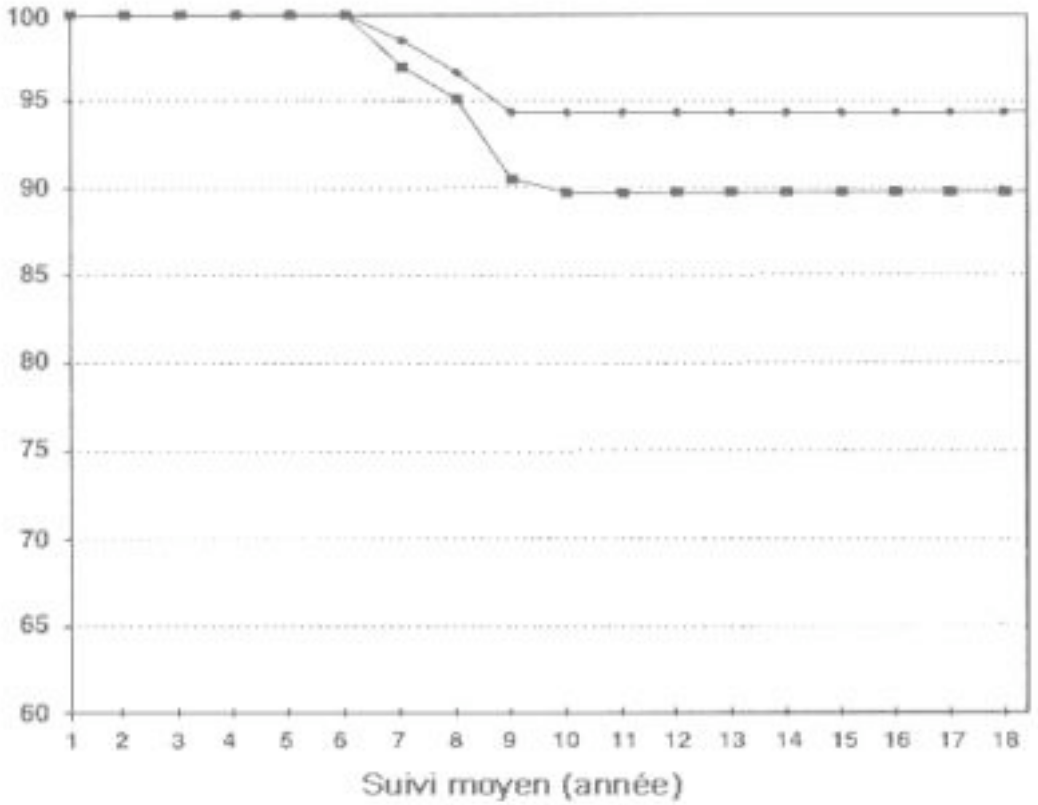
Mobile: Contact stresses do not change



Taux de survie des PTG

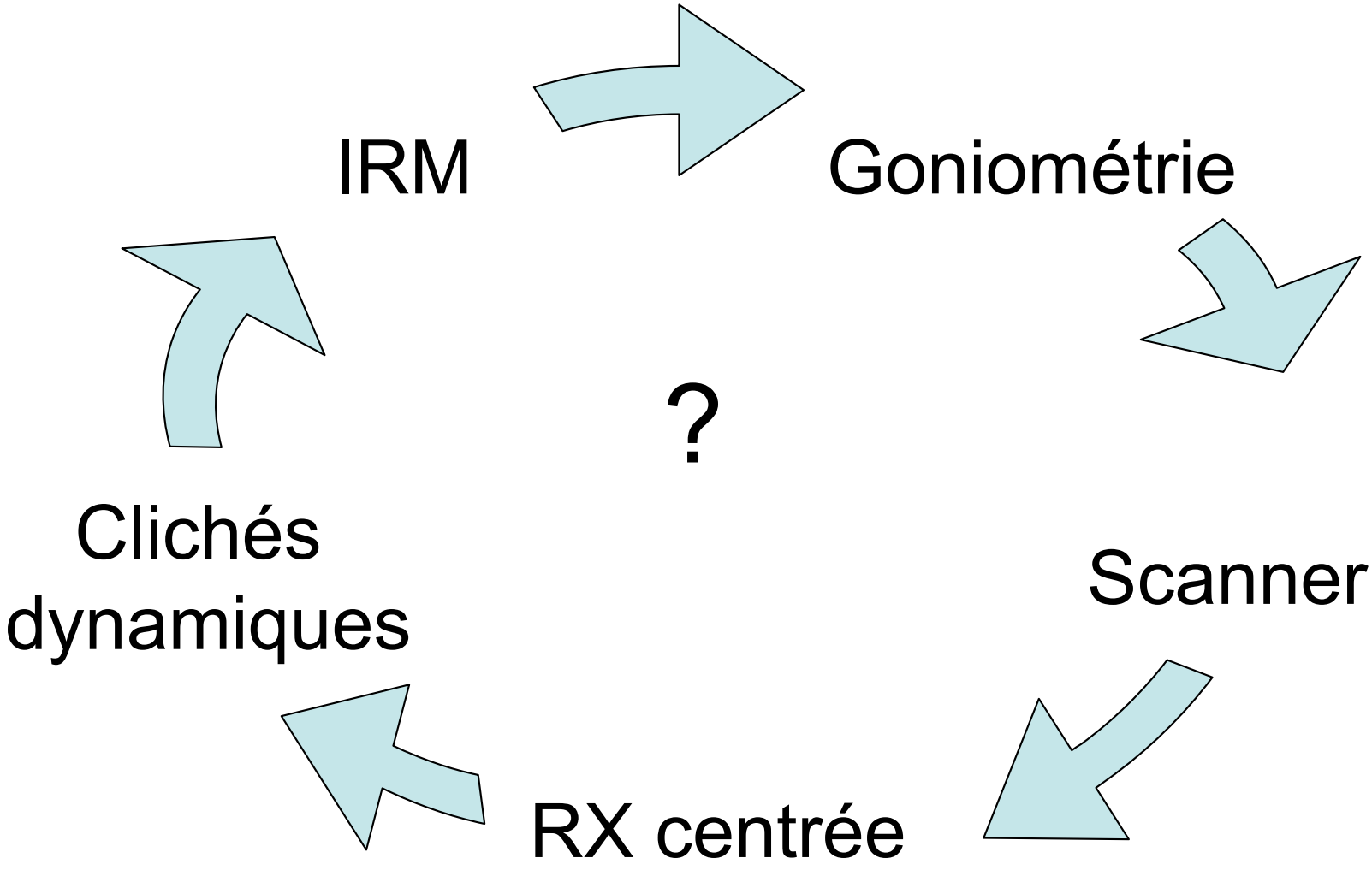


90% à 95% à 18 ans



Diduch DR, Insall JN, Scott N.
JBJS 79-A : 575-582, 1997.

Quel bilan RX préop avant PTG???

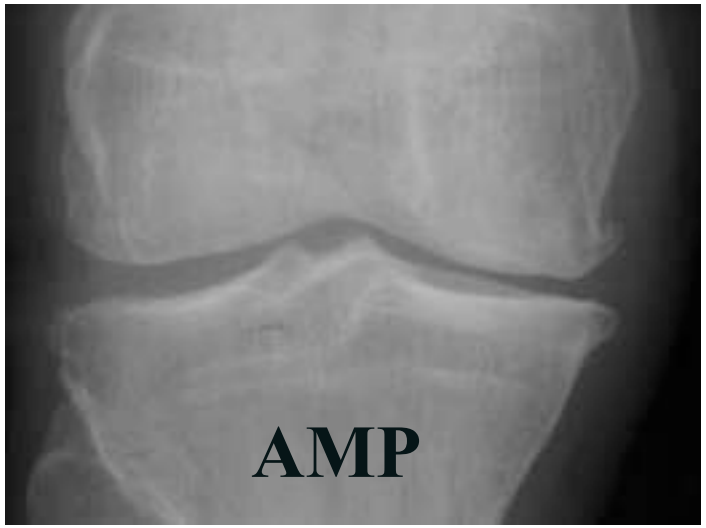


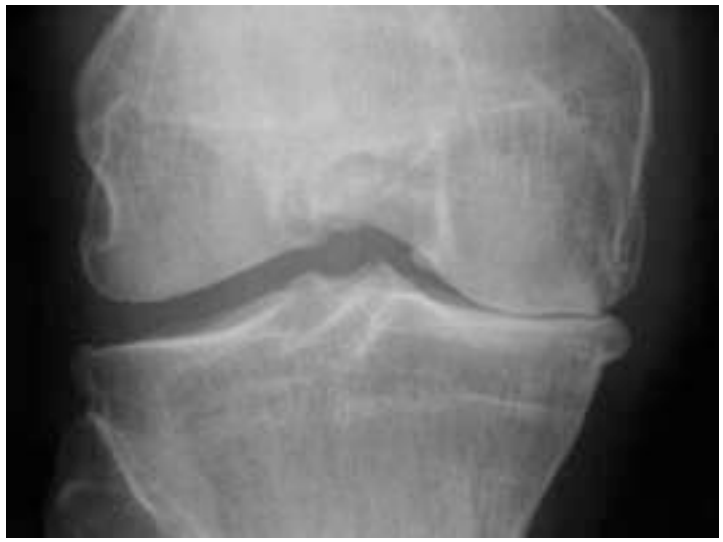
1. **RX centrée**
2. Goniométrie
3. Scanner
4. IRM

1- Intérêt diagnostic → Stade lésionnel

Appui monopodal
Face et Shuss
Profil
VA 30°

- ✓Pincement
- ✓Usure
- ✓Décoaptation
- ✓Translation
- ✓Rotule



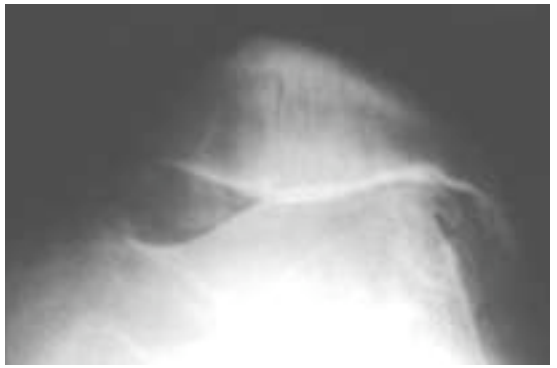


1. **RX centrée**
2. Goniométrie
3. Scanner
4. IRM

2- Planning préop

- Voie d'abord
- Type de Prothèse
- Gestes associés
- Pertes de substce osseuses






1. **RX centrée**
2. Goniométrie
3. Scanner
4. IRM

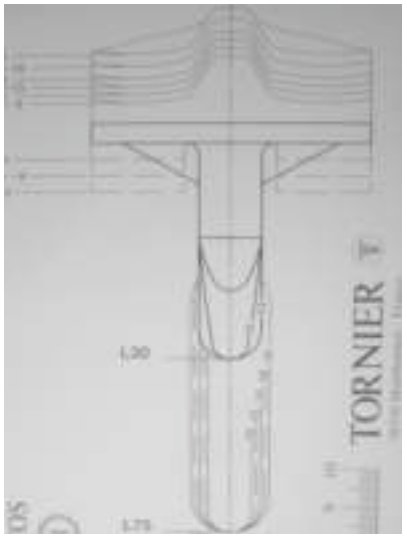
2- Planning préop

Calques → Coefficient d'agrandissement = 1

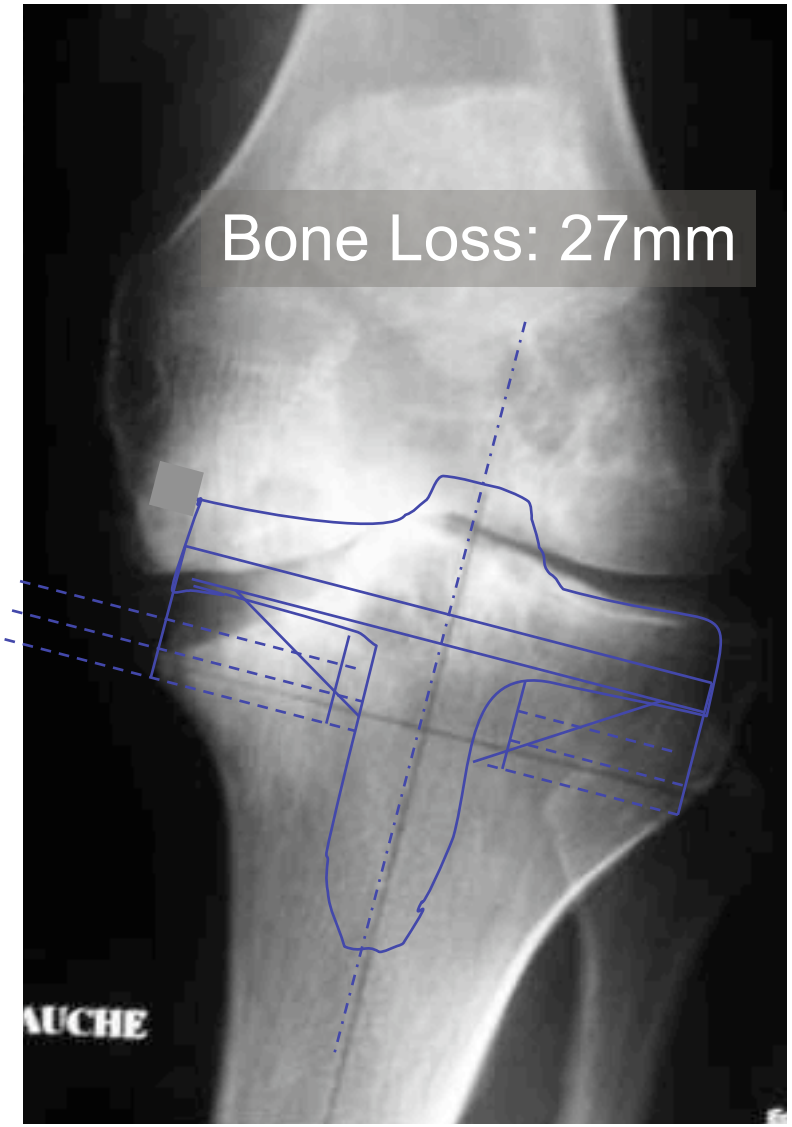
1. **RX centrée**
2. Goniométrie
3. Scanner
4. IRM

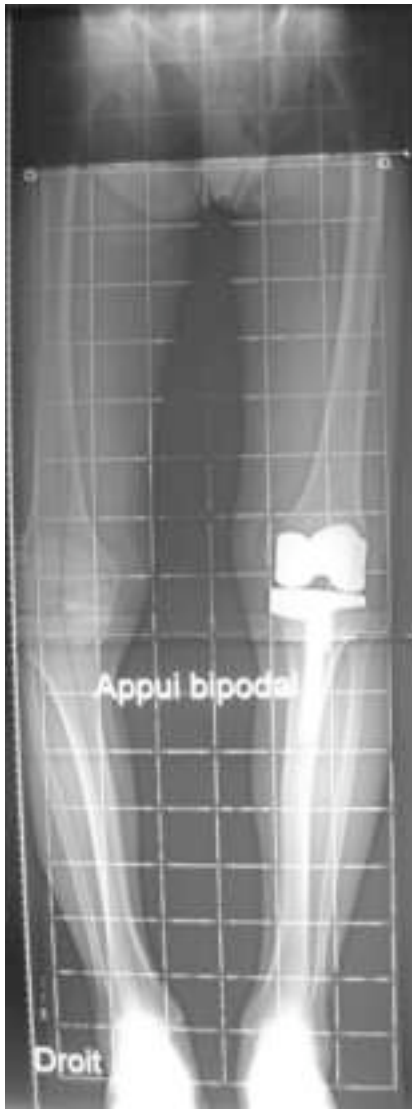
2- Planning préop☞ Clichés à 100%

Reconstruction des pertes osseuses

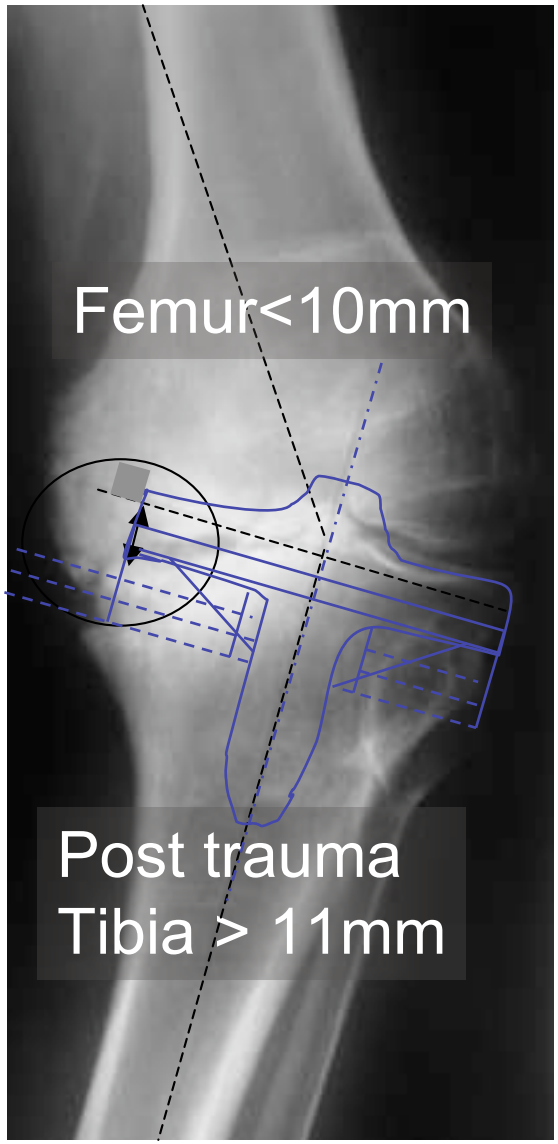


Bone Defect > 11mm





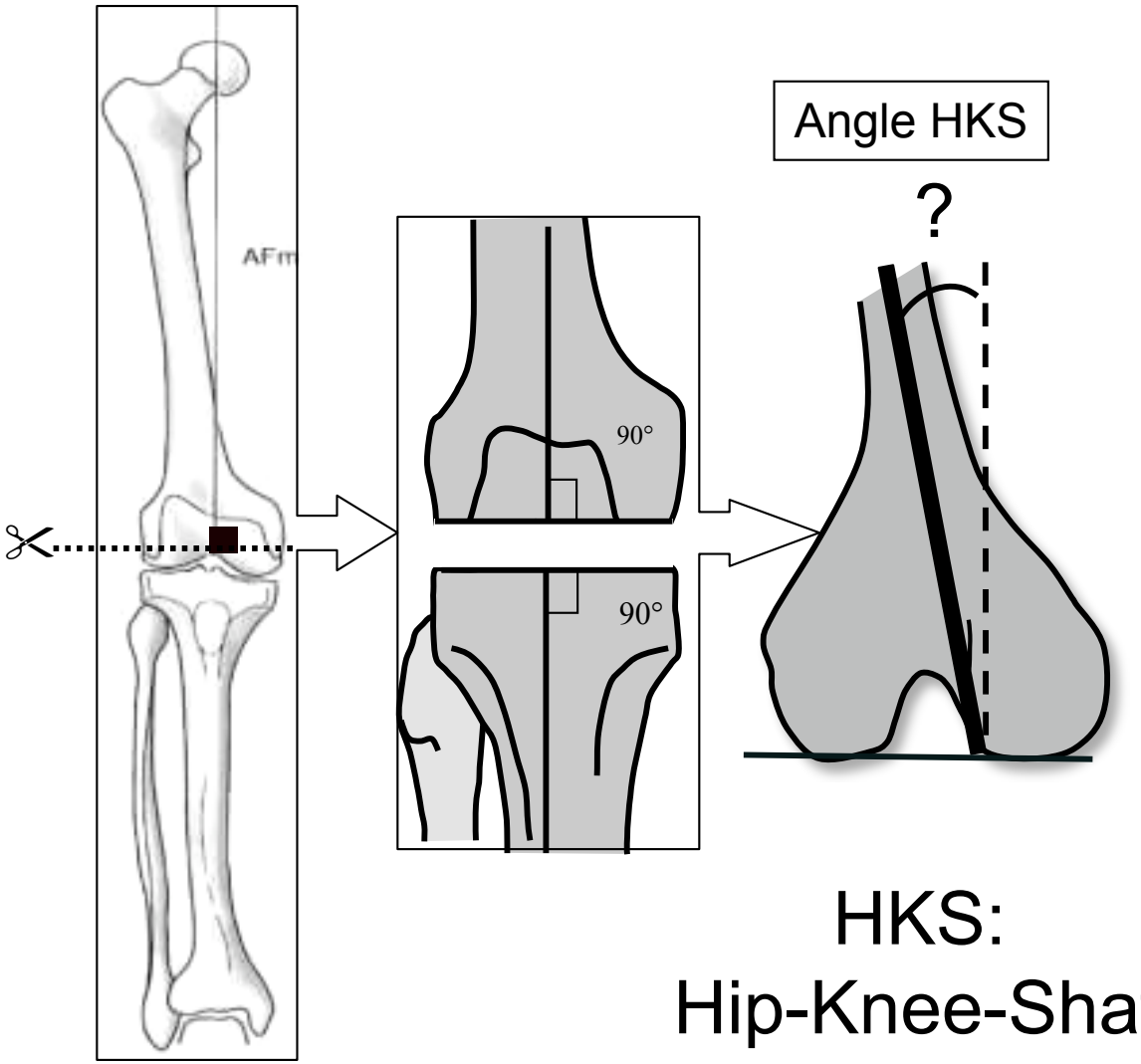
Bone Defect > 11mm



1. RX centrée
2. **Goniométrie**
3. Scanner
4. IRM

1-Restitution axe mécanique

PTG ☞ Perpendiculaire à l'axe mécanique

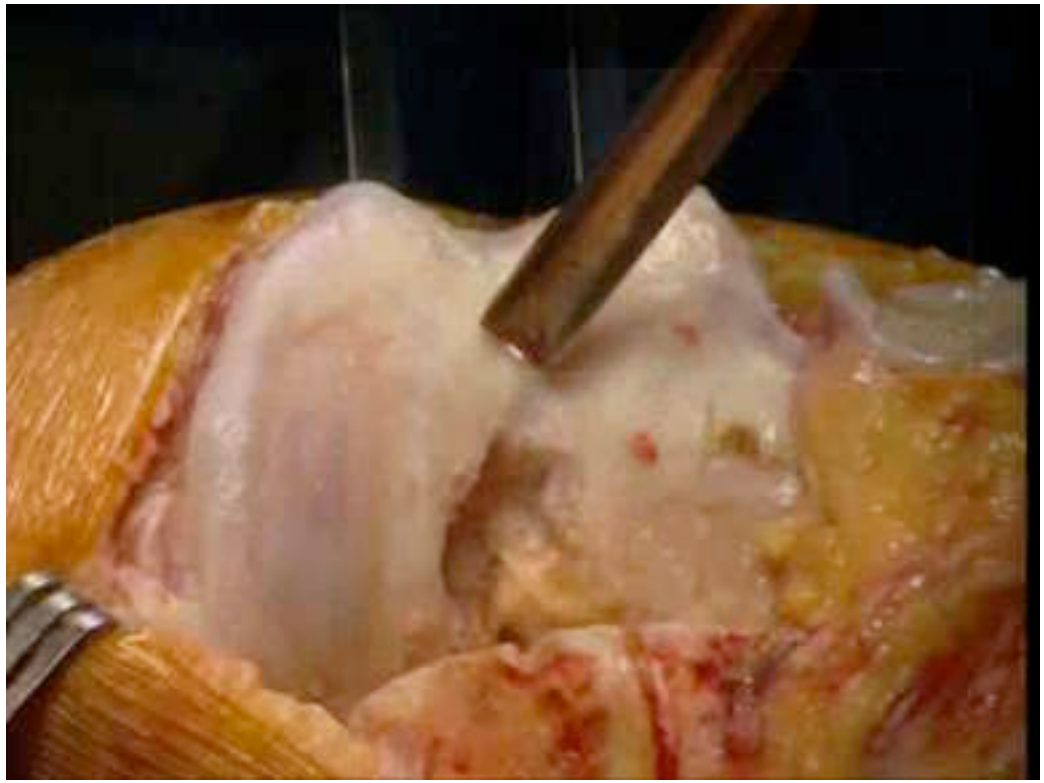


HKS:
Hip-Knee-Shaft

1. RX centrée
2. **Goniométrie**
3. Scanner
4. IRM

1-Restitution axe mécanique

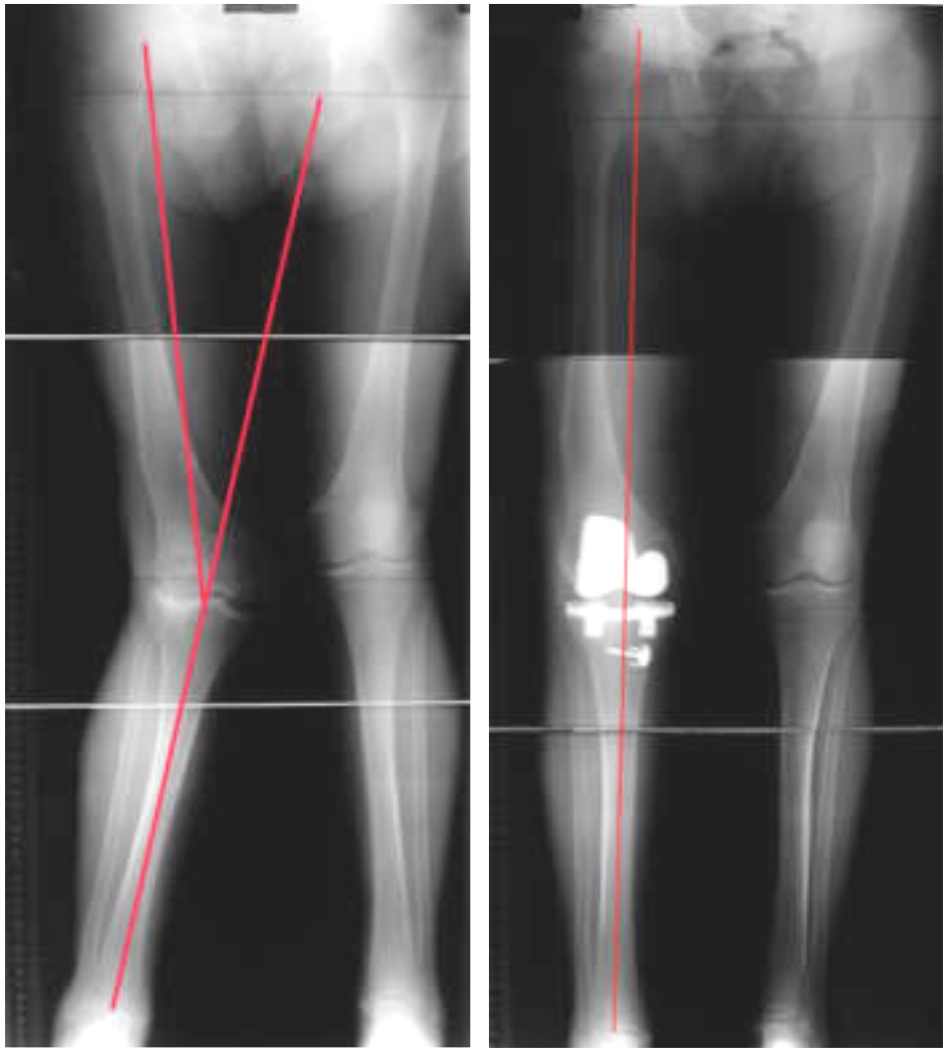
HKS = 6,61 ± 1,4 4° à 12°



1. **RX centrée**
2. **Goniométrie**
3. **Scanner**
4. **IRM**

2-Déformations extra articulaires

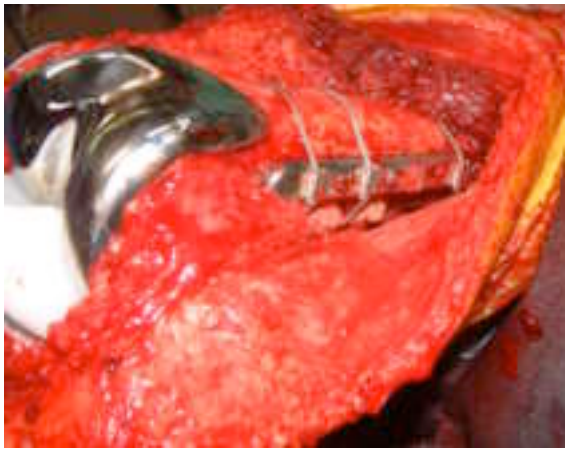
Correction par la prothèse

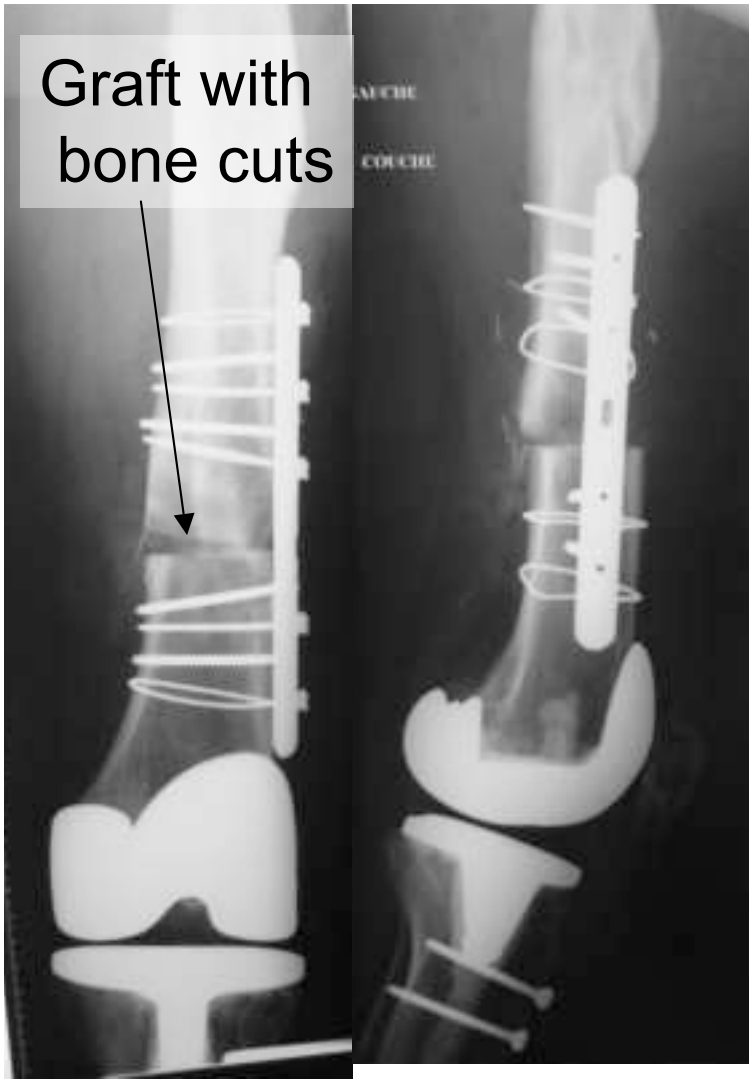


1. RX centrée
2. **Goniométrie**
3. Scanner
4. IRM

2- Déformations extra articulaires

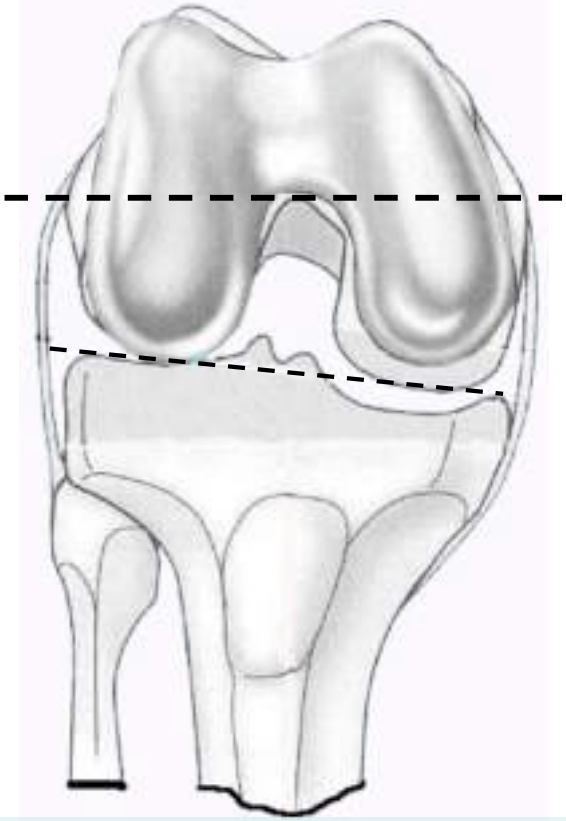
Correction par ostéotomie

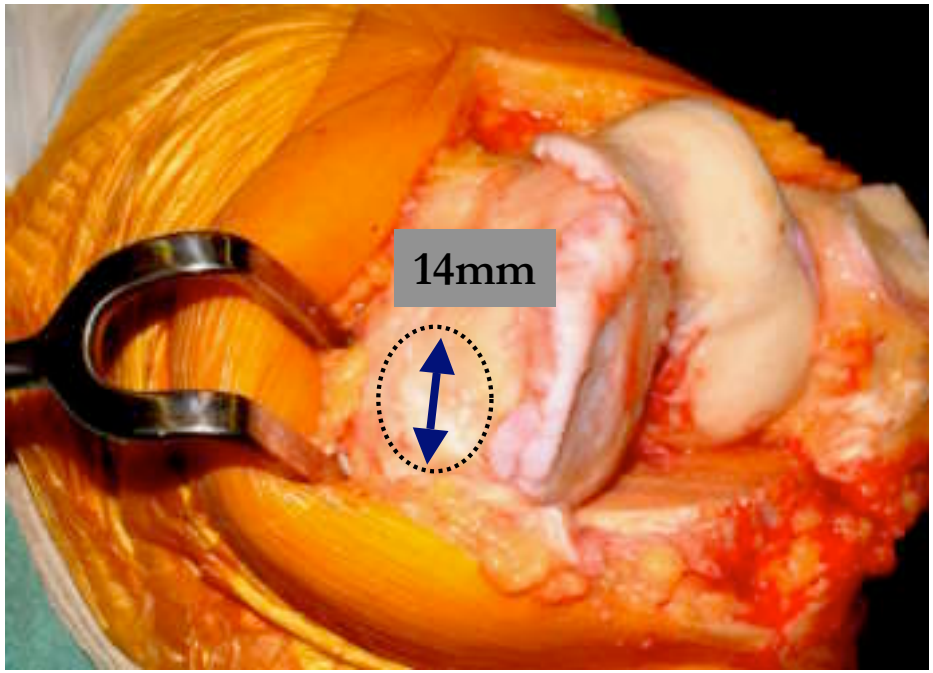




1. RX centrée
2. Goniométrie
3. **Scanner**
4. IRM

1 Adaptation de la rotation fémorale

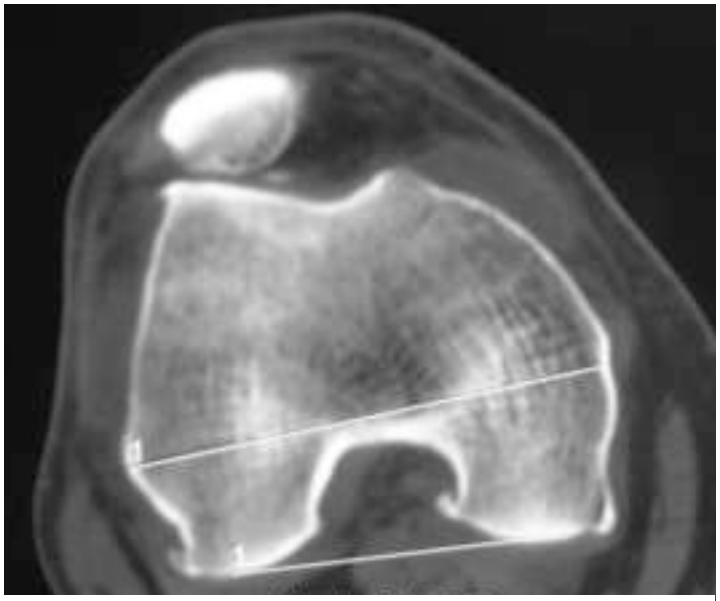




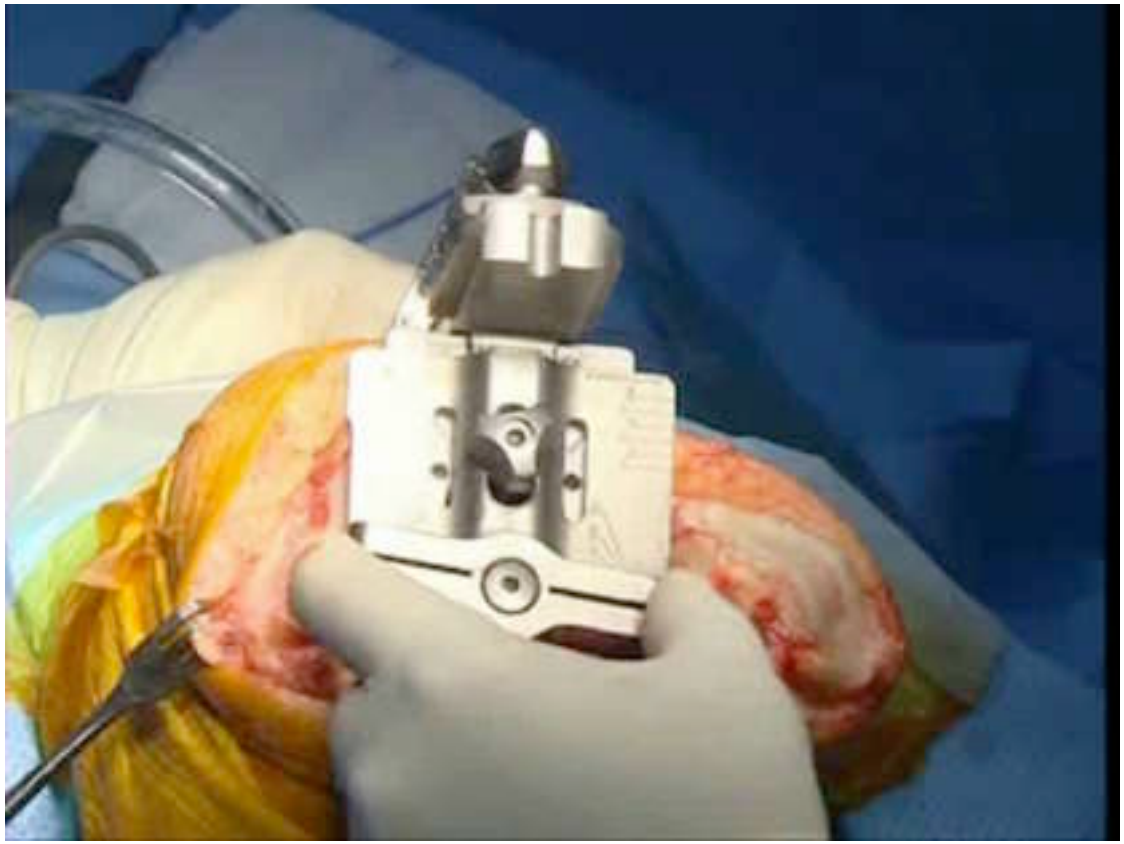
- Akagi CORR 2001
- Berger CORR 1993, 1998
- Stiehl J Arthroplasty 1995
- Griffin J Arth 1998
- Yoshino CORR 2001

1. RX centrée
2. Goniométrie
3. **Scanner**
4. IRM

Repérage préop par scanner



α = 1,5° (-7° à + 8°)



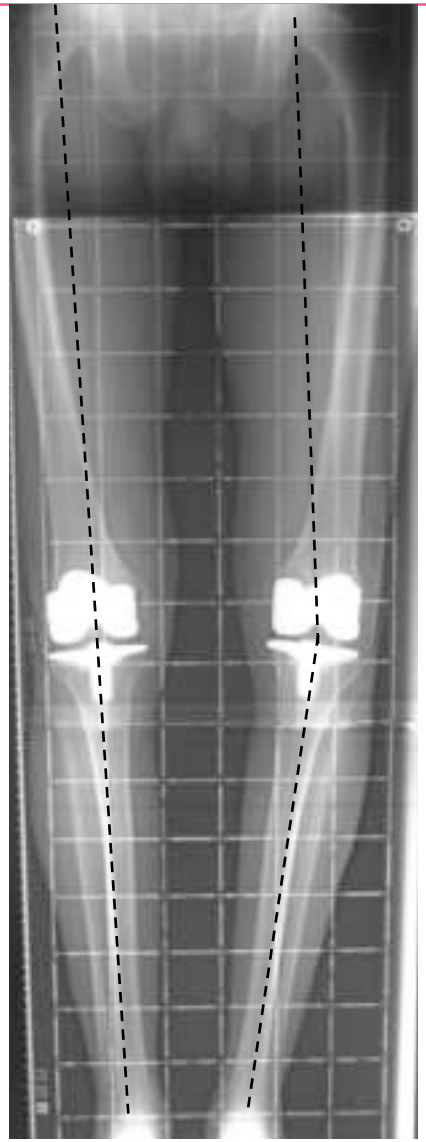
1. RX centrée
2. Goniométrie
3. Scanner
4. **IRM**

Nécroses

- **Axes**
- Adéquation
- Interface
- Interligne
- Rotule

Qu'est ce qu'une bonne RX après PTG???

☞ Objectif N°1
=
membre normo axé



- **Axes**
- Adéquation
- Interface
- Interligne
- Rotule

Qu'est ce qu'une bonne RX après PTG???

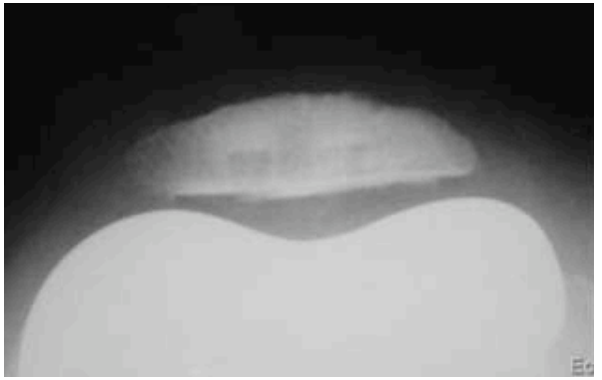
☞ Plan sagittal: Pente tibiale [0° à 5°]

- Axes
- **Adéquation**
- Interface
- Interligne
- Rotule

Qu'est ce qu'une bonne RX après PTG???

- Axes
- Adéquation
- **Interface**
- Interligne
- Rotule

Qu'est ce qu'une bonne RX après PTG???

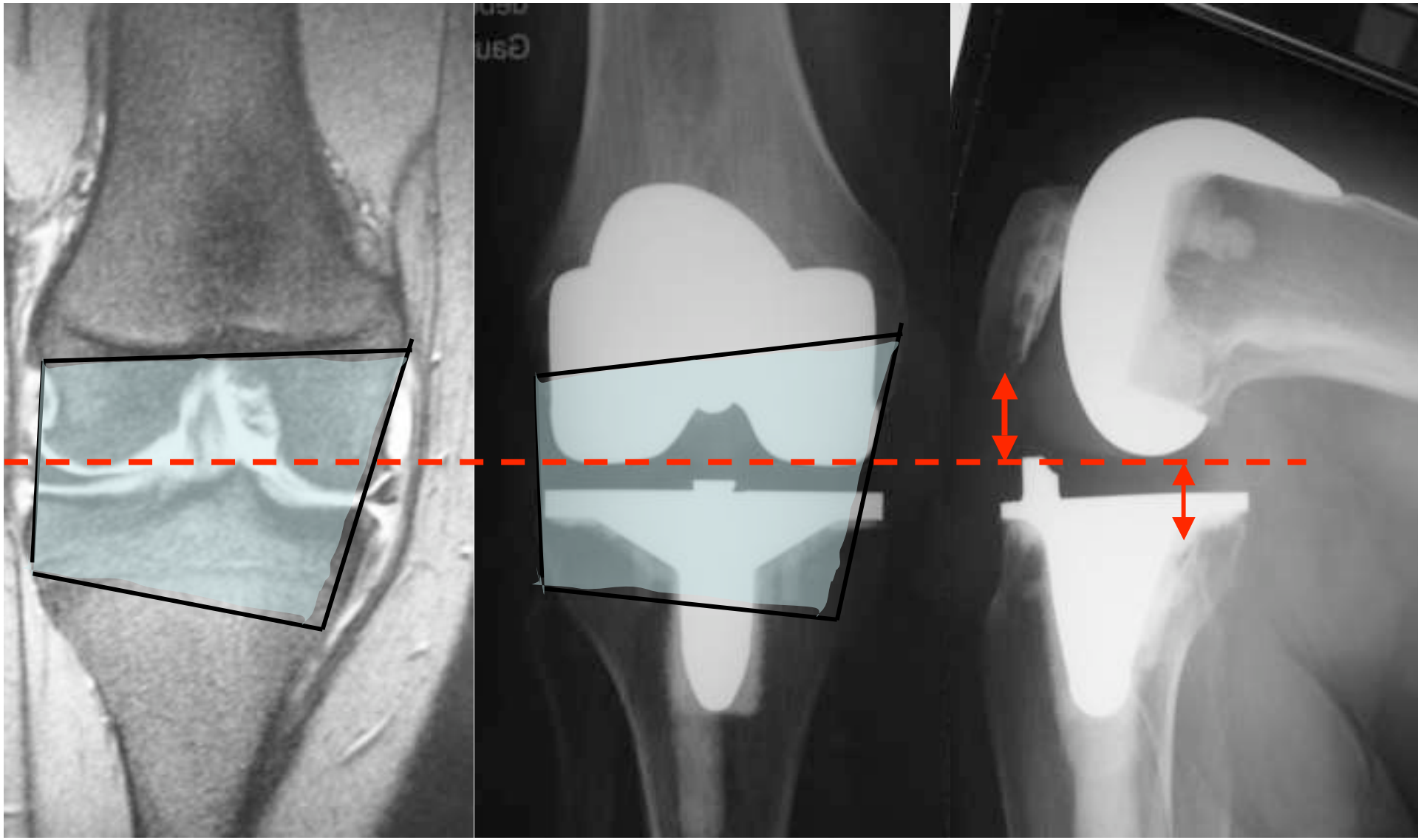


Absence de liseré

Nécessité de clichés parfaitement alignés / embase

- Axes
- Adéquation
- Interface
- **Interligne**
- Rotule

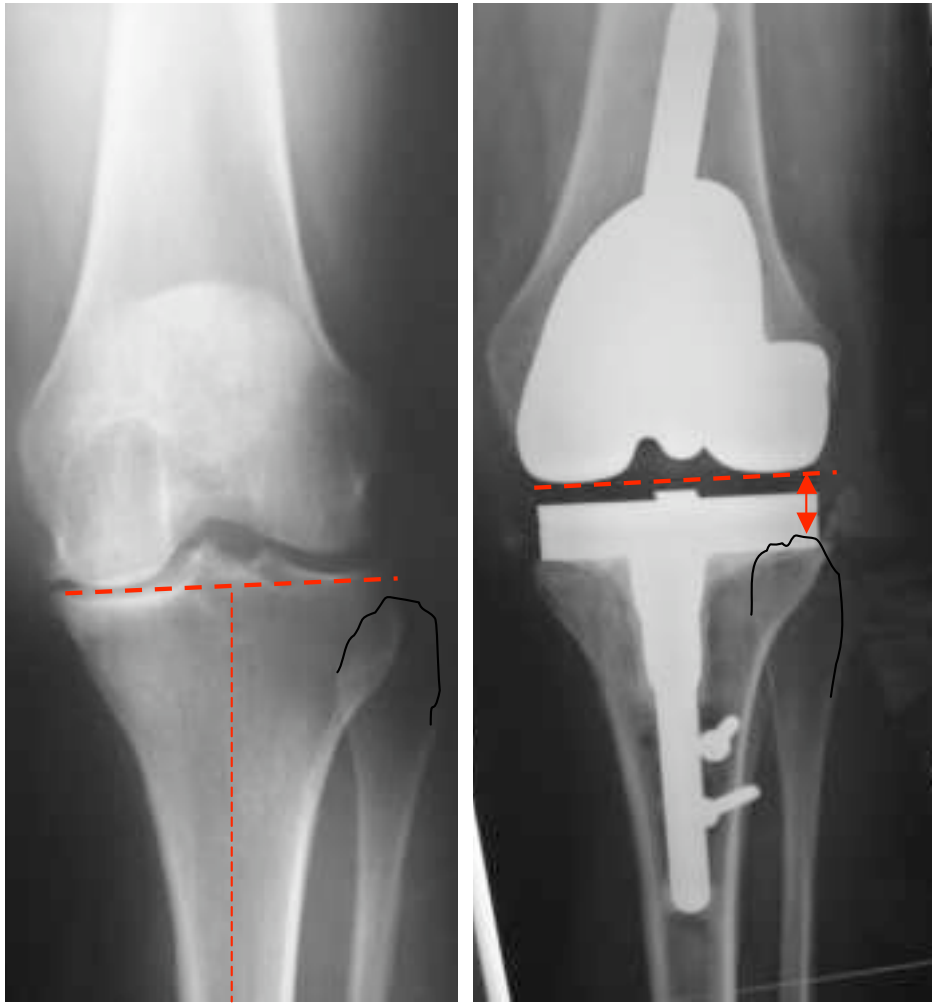
Qu'est ce qu'une bonne RX après PTG???

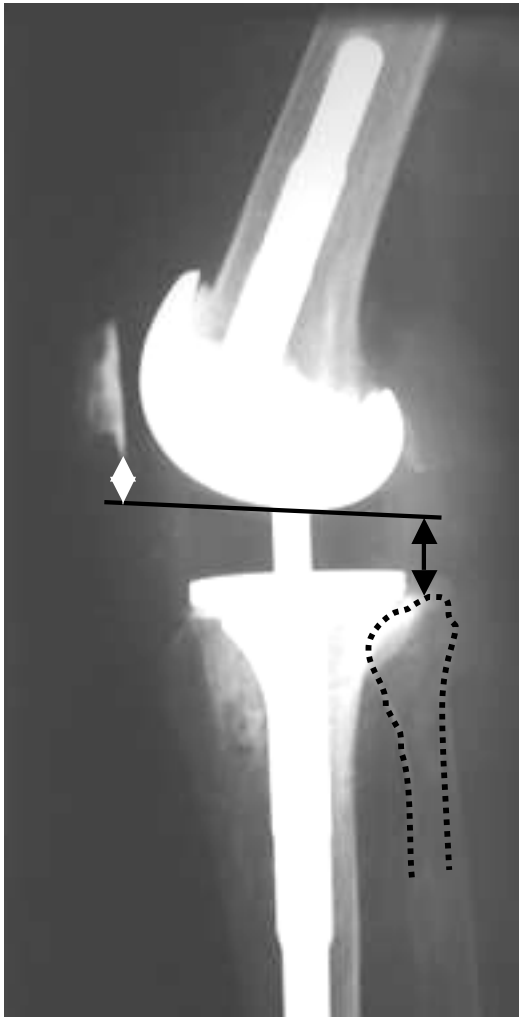


- Axes
- Adéquation
- Interface
- **Interligne**
- Rotule

Qu'est ce qu'une bonne RX après PTG???

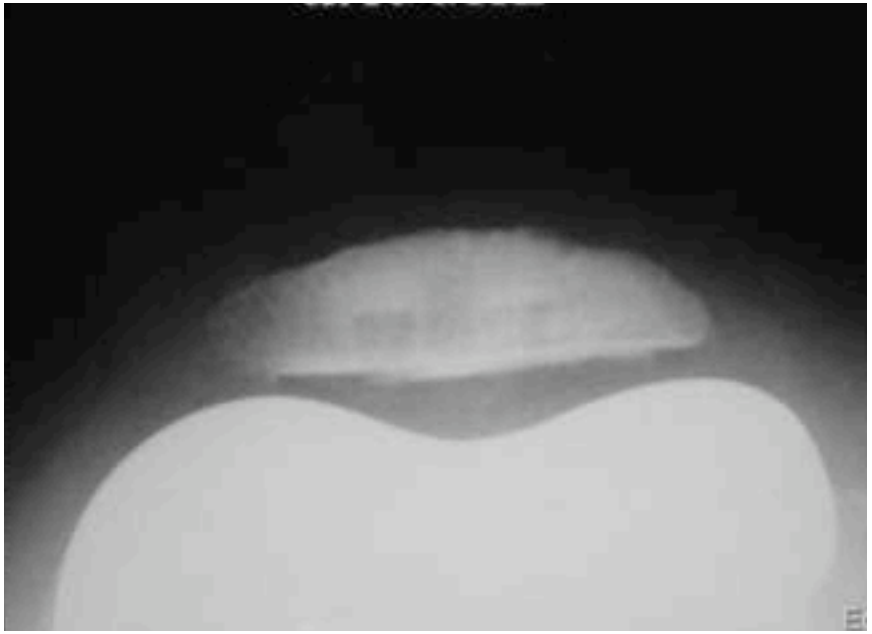
☞ Niveau de l'interligne articulaire



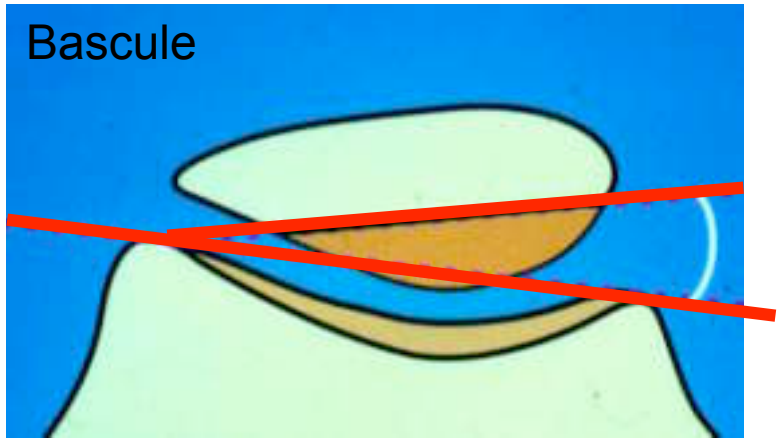


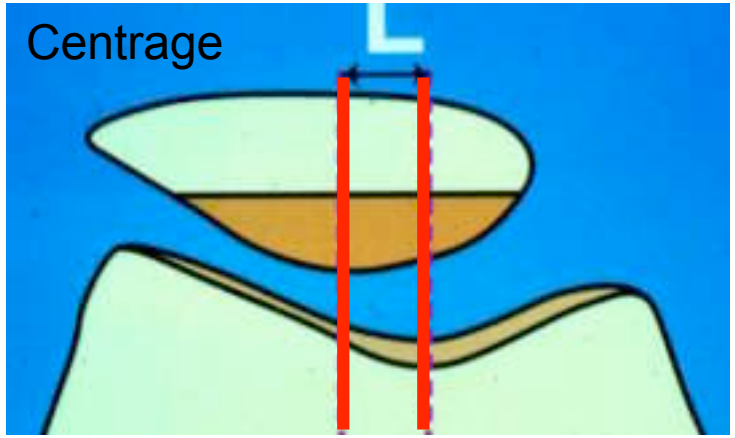
- Axes
- Adéquation
- Interface
- Interligne
- **Rotule**

Qu'est ce qu'une bonne RX après PTG???



Centrée
Non basculée



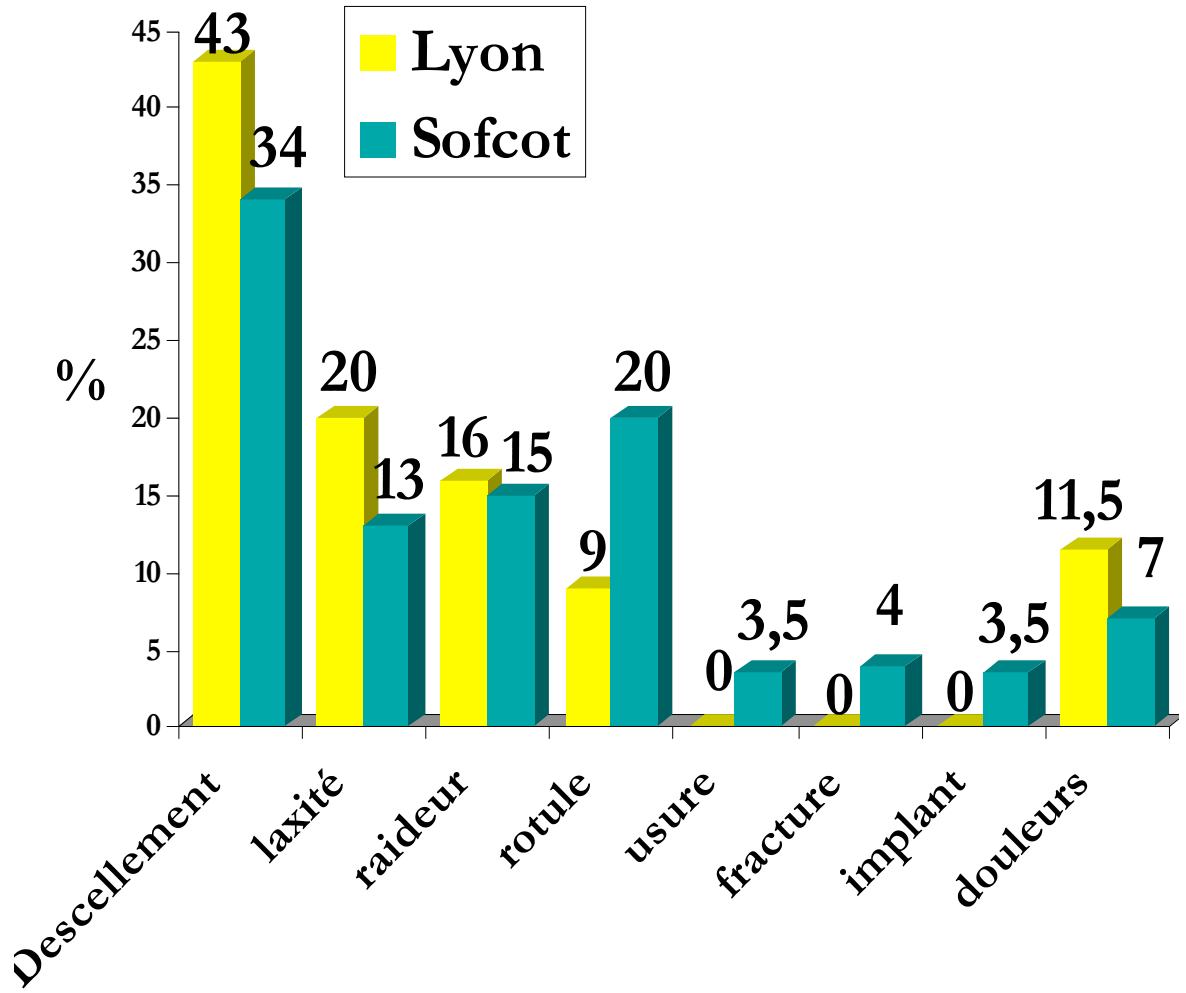


- Axes
- Adéquation
- Interface
- Interligne
- **Rotule**

Qu'est ce qu'une bonne RX après PTG???

- ✓Hauteur rotulienne/ Interligne
- ✓Centrage du bouton rotulien
- ✓Epaisseur rotulienne

Causes d'échec des PTG



Symposium sofcot 2000
Bonnin et al RCO 2000

Descellements

- Liserés
- Migration des pièces

Critères de Ewald:

- > 2mm
- Etendu tt tibia
- Zone 5-6-7
- Liseré évolutif

CORR 248, 1989

Descellements

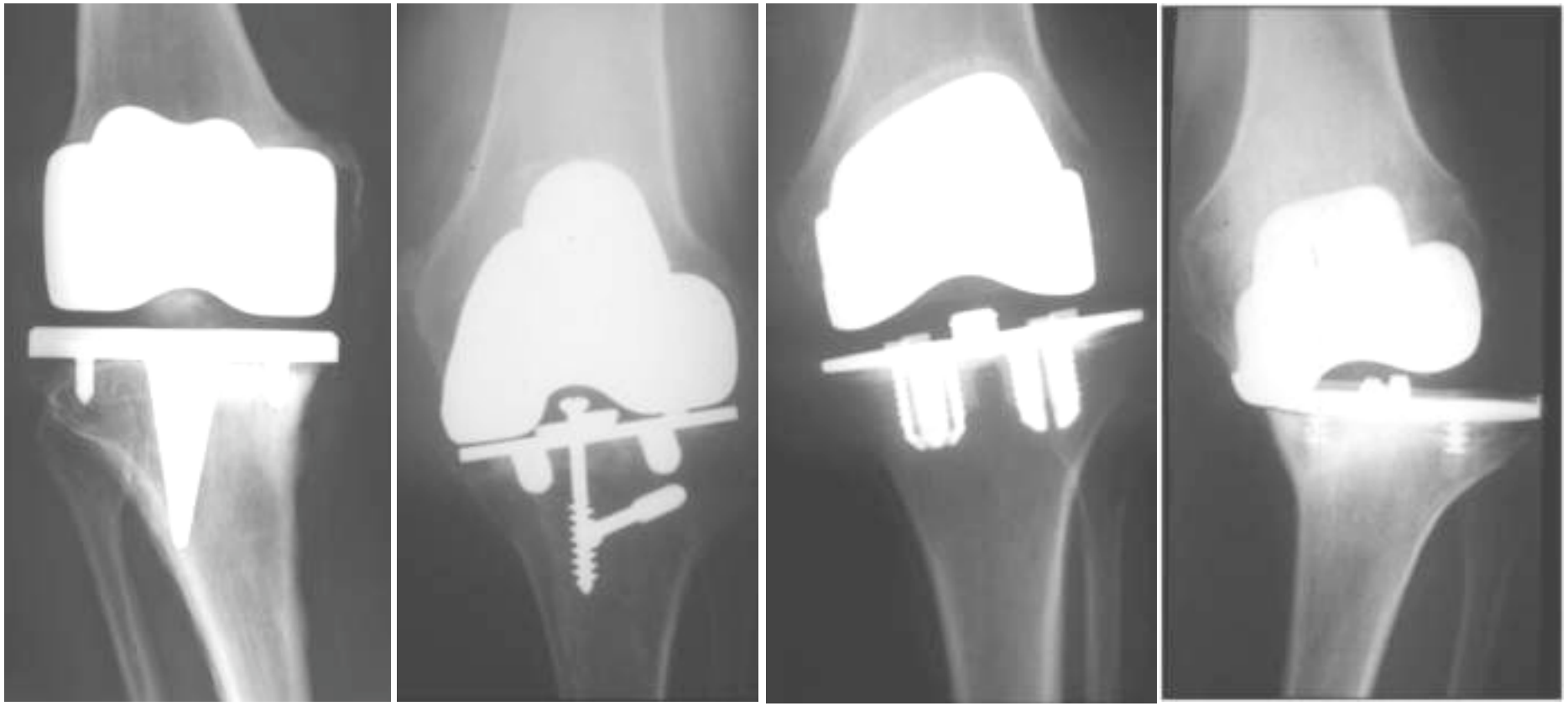
- Liserés
- Migration des pièces

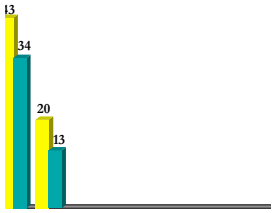
Descellements ☞ Trouver la cause

Défaut d'alignement plan frontal

Descellements ☞ Trouver la cause

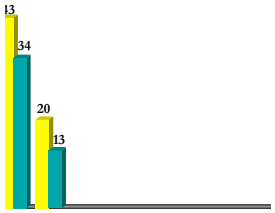
Defaut d'alignement plan frontal





Laxités

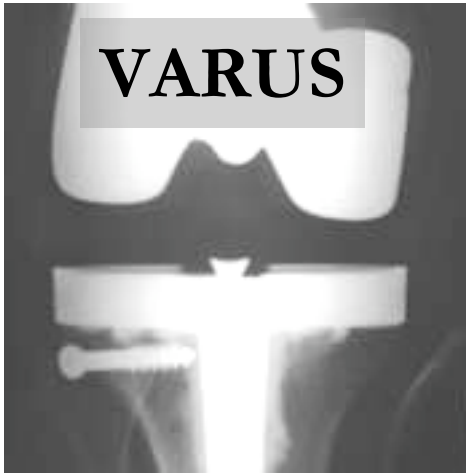
- **En Extension = vraies laxités**
- **En Flexion = Laxités cachées**

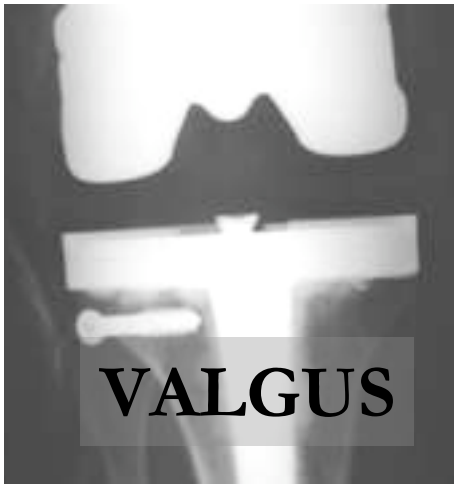


Laxités

- **En Extension = vraies laxités**
- **En Flexion = Laxités cachées**

Clichés dynamiques en extension

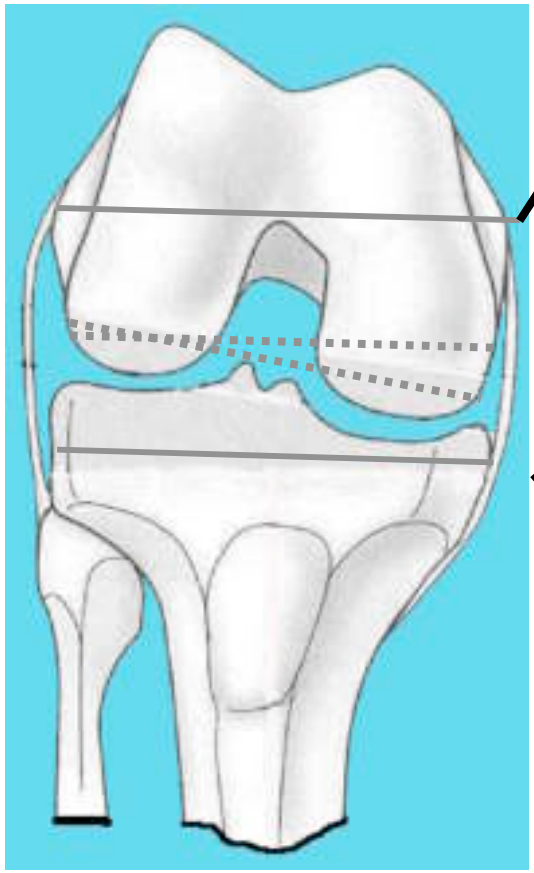


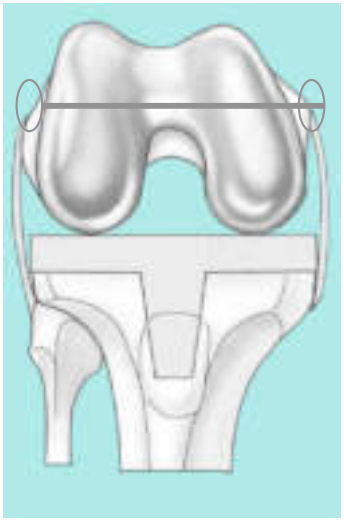


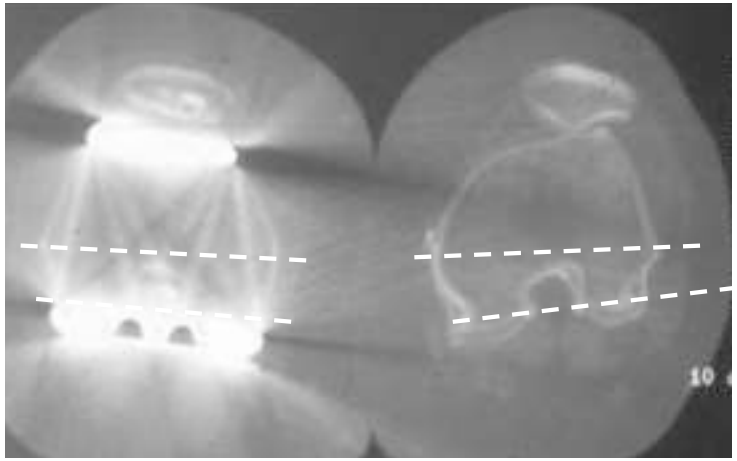
Laxités

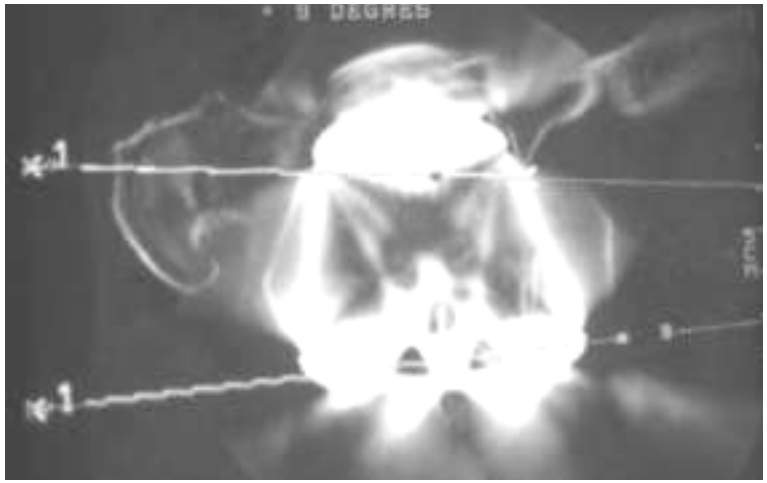
- En Extension = vraies laxités
- En Flexion = Laxités cachées

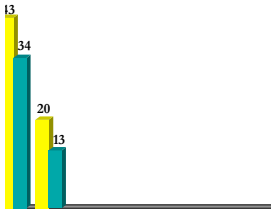
MALROTATION





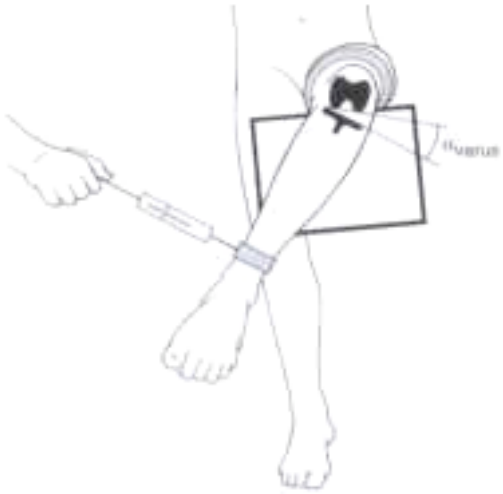






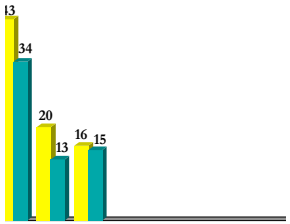
Laxités

- En Extension = vraies laxités
- En Flexion = Laxités cachées



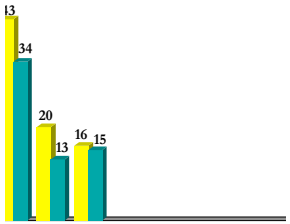
Clichés dynamiques en flexion

Stähelin et al J Arthroplasty 2003



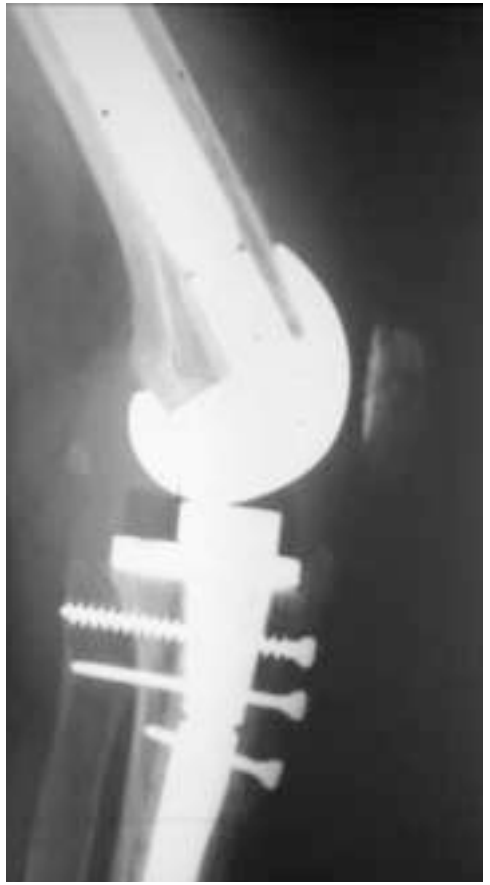
Raideurs

- Ossifications
- CE intra@
- Surdimensionnée
- Interligne
- Rotule basse



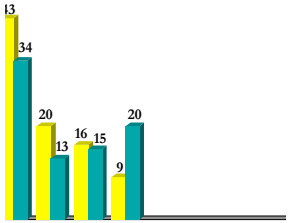
Raideurs

- Ossifications
- CE intra@
- Surdimensionnée
- Interligne



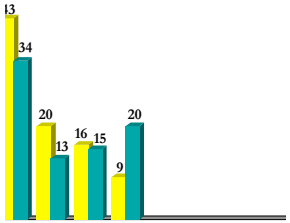
Clichés comparatifs

- Genou pré op
- Genou Contro latéral



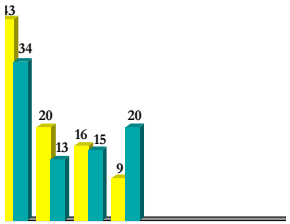
Rotule

- **Instabilité**
- **Fracture**
- **Douleur**



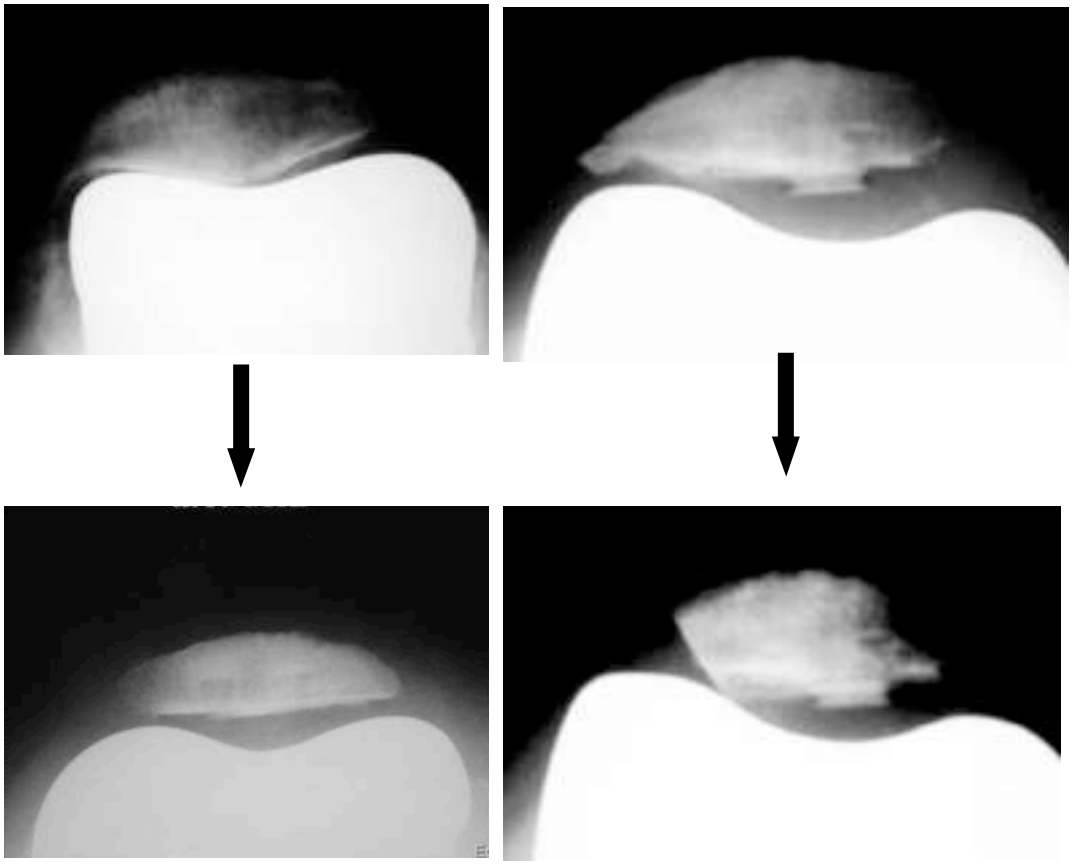
Rotule

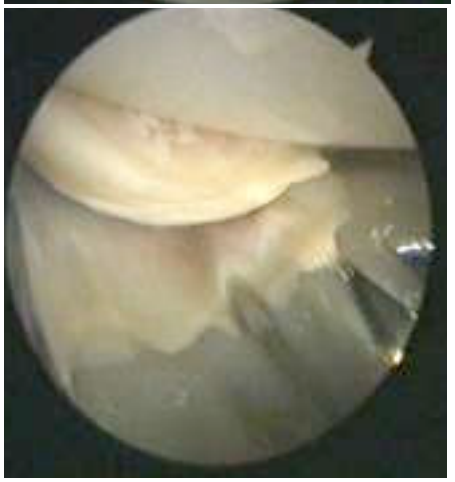
- Instabilité
- **Fracture**
- Douleur

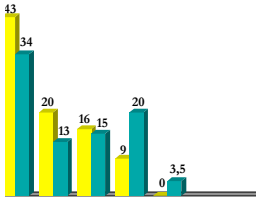


Rotule

- Instabilité
- Fracture
- **Douleur**

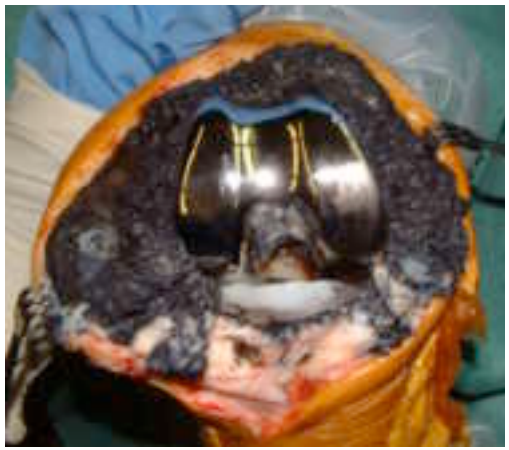


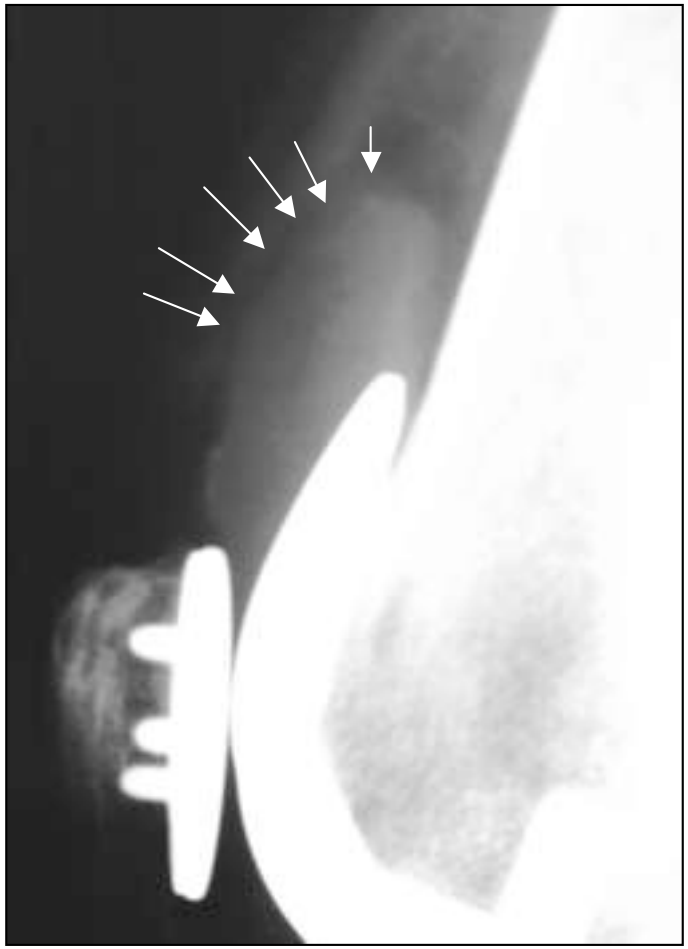


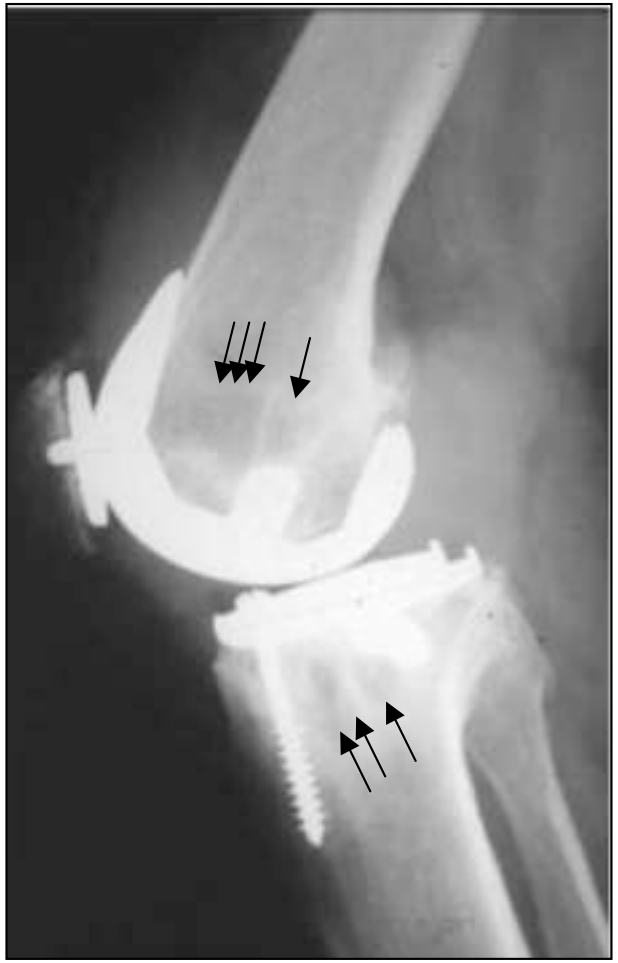


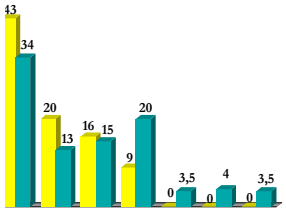
Usure

- Pincement
- Métallose
- Ostéolyse

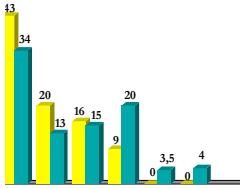






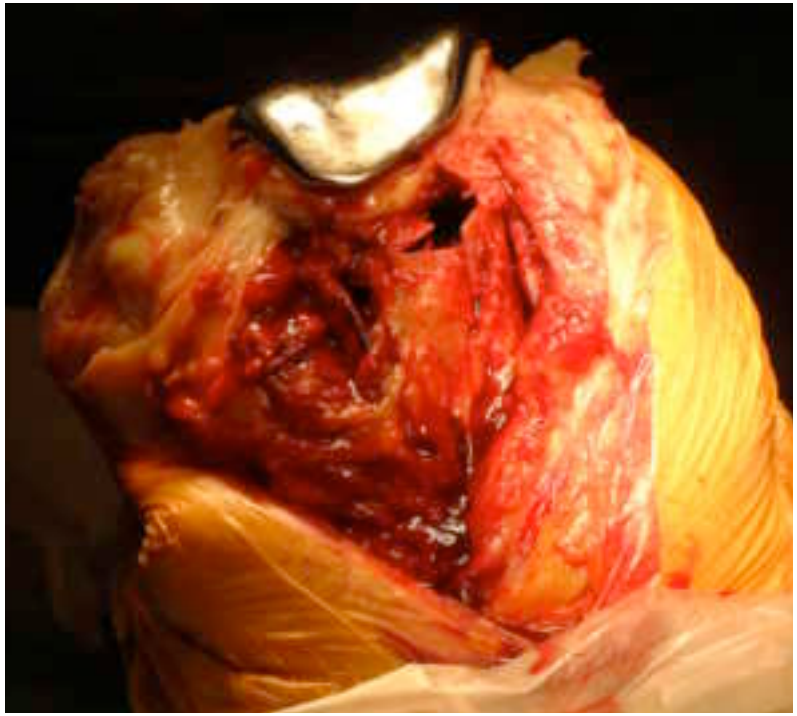


Ruptures d'implants

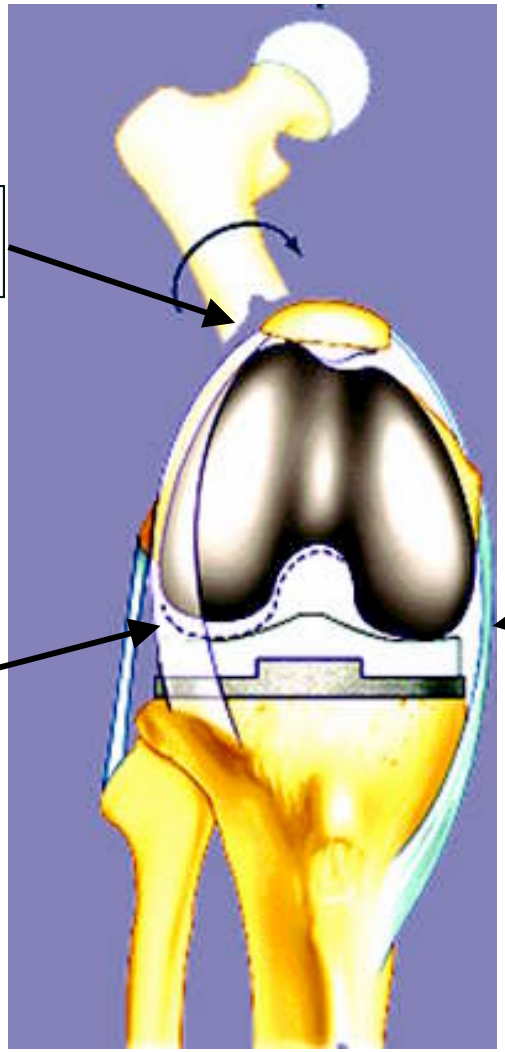


Fractures périprothétiques

- Ostéosynthèse
- Changement de prothèse
- Ttt Orthopédique



Malrotation Fémorale en Rotation Interne

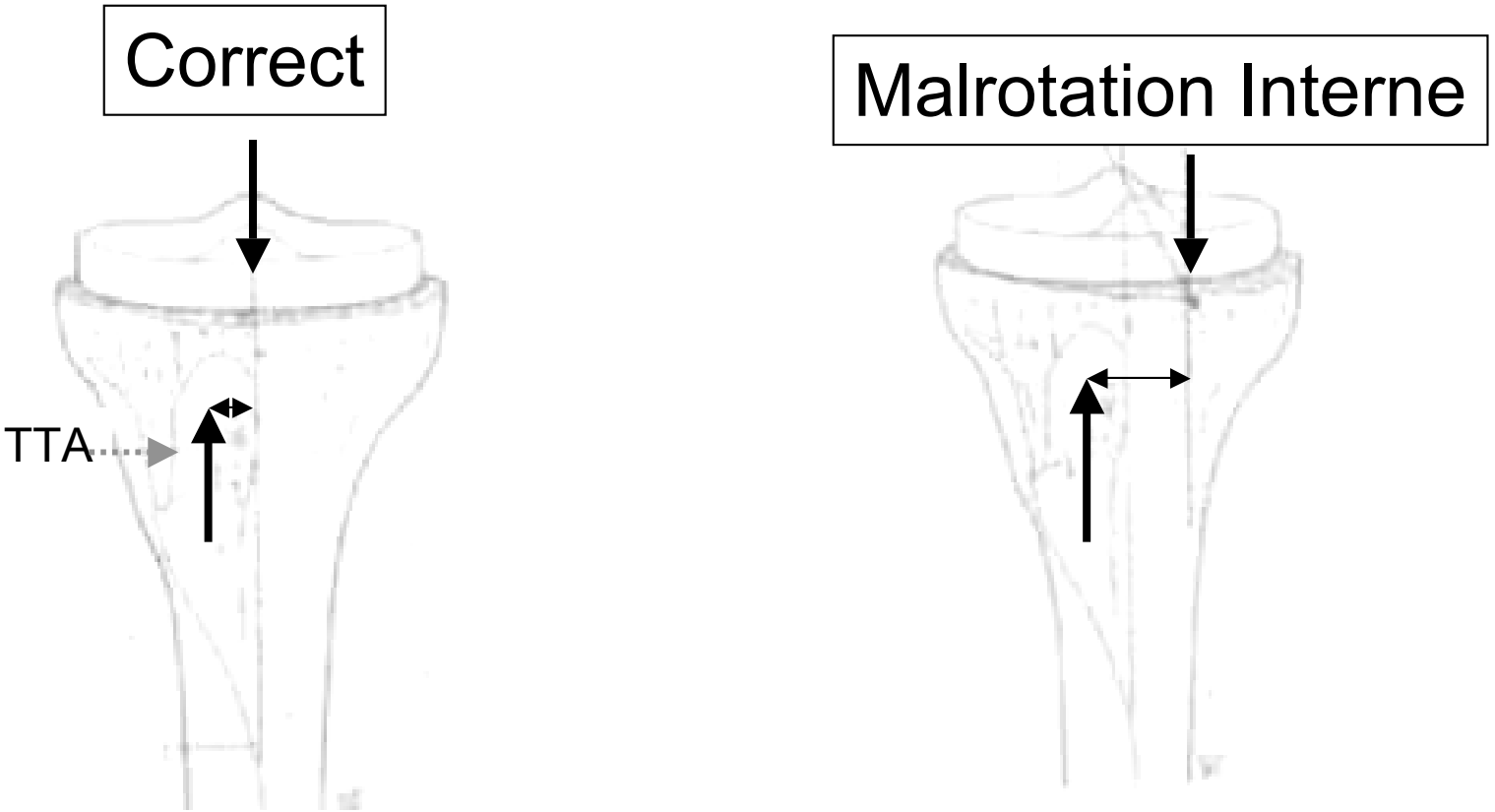


Instabilité rotulienne

Laxité externe en flexion

Raideur

Malrotation Tibiale en Rotation Interne



TAGT augmente ☞ Instabilité rotulienne

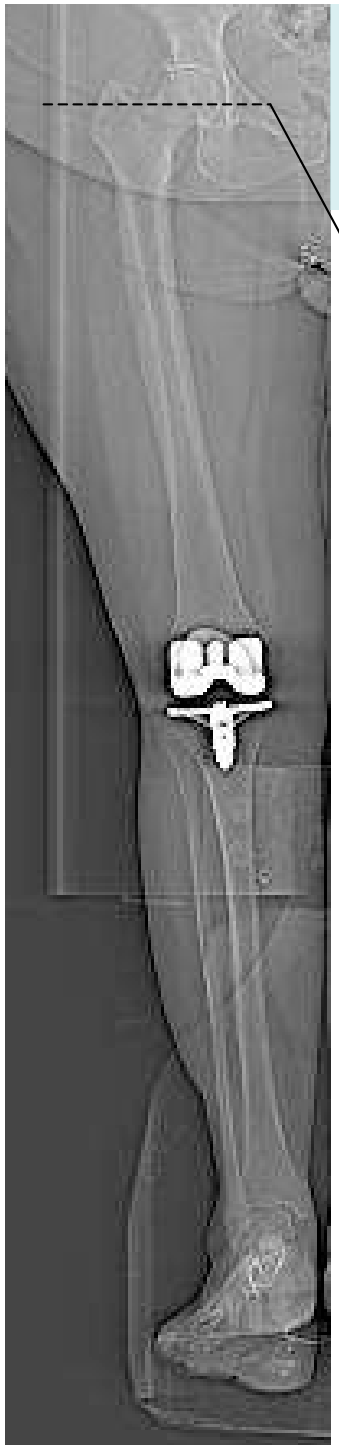
Quand suspecter une malrotation???

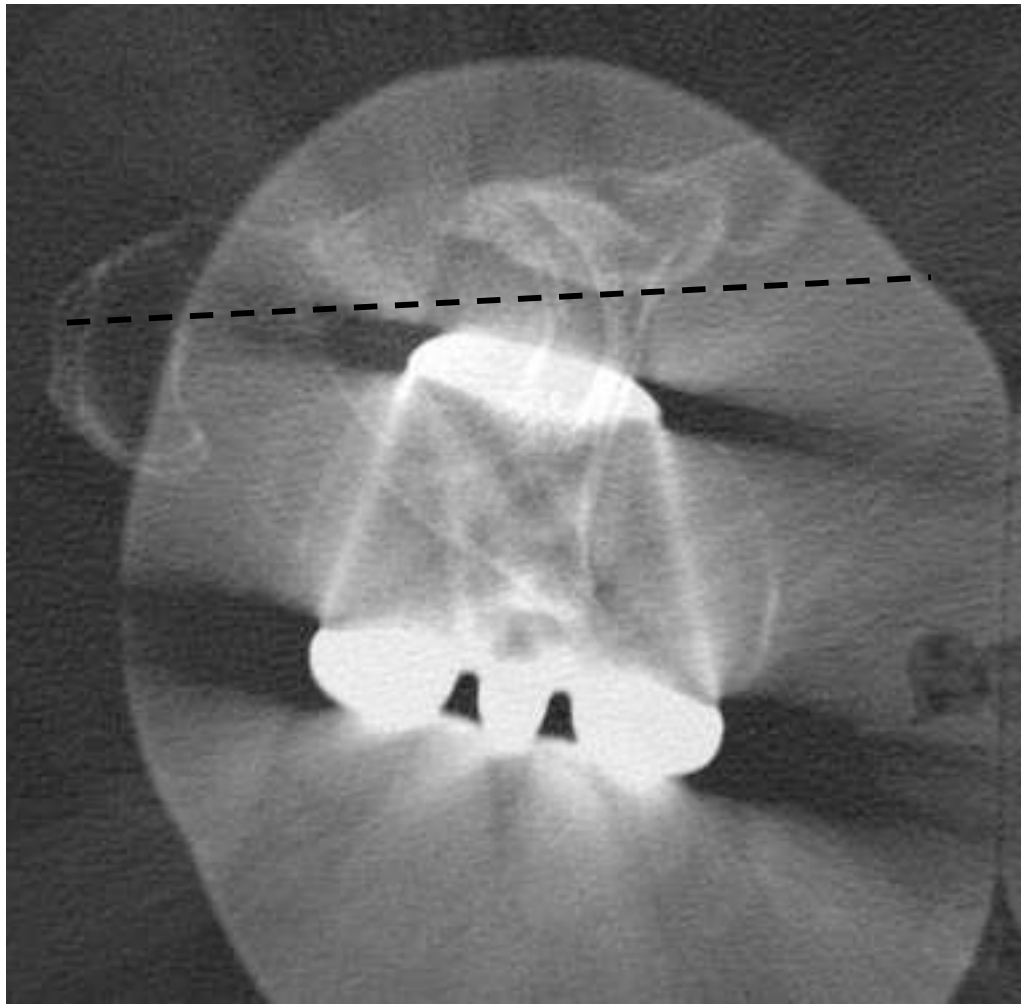
- Toute complication rotulienne
- Laxité en flexion
- Raideur inexpliquée
- Douleurs inexpliquée

Protocole SFHG

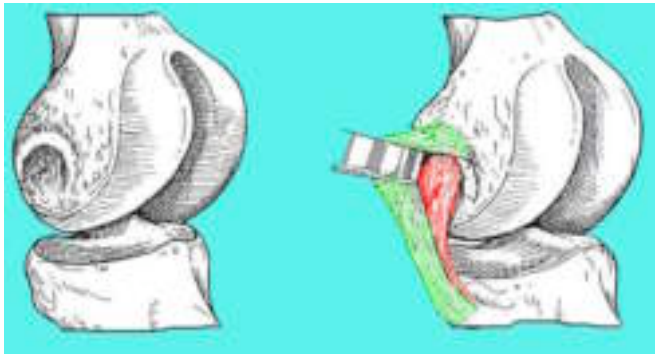
M Bonnin/ Y Carrillon

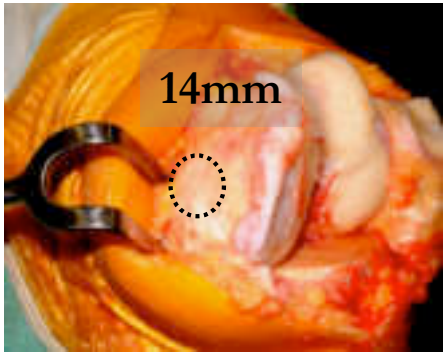
1- Antéversion Fémorale

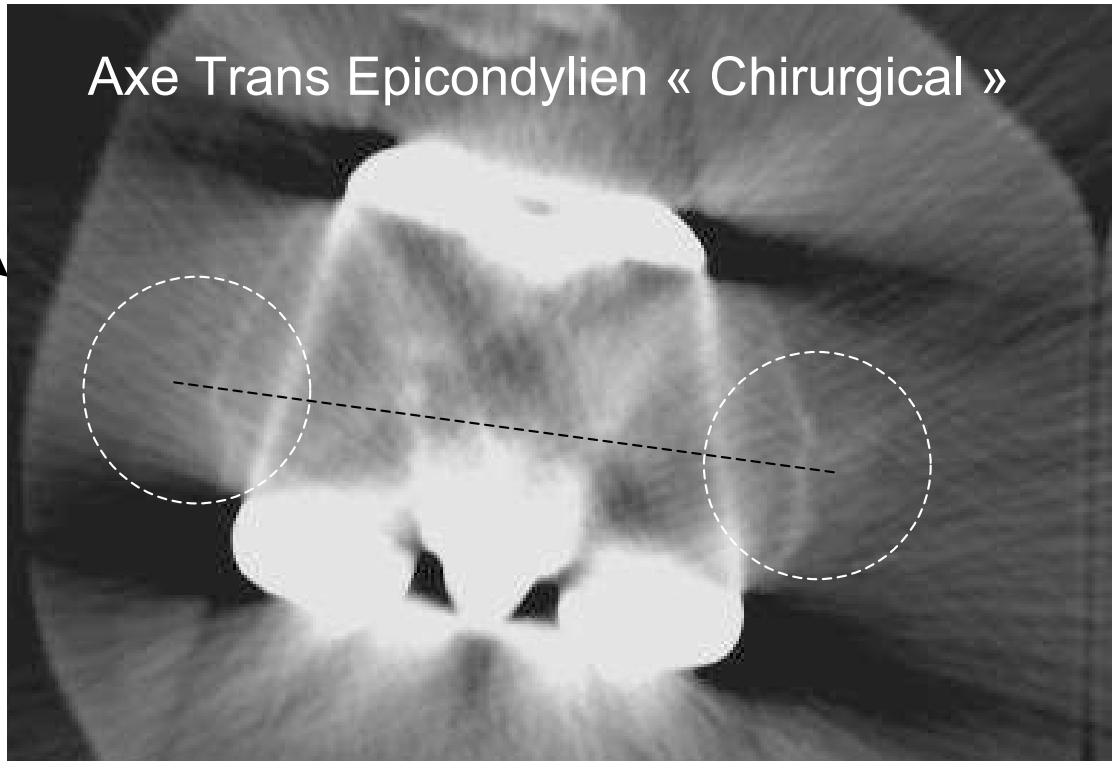




2- Axe Trans Epicondylien

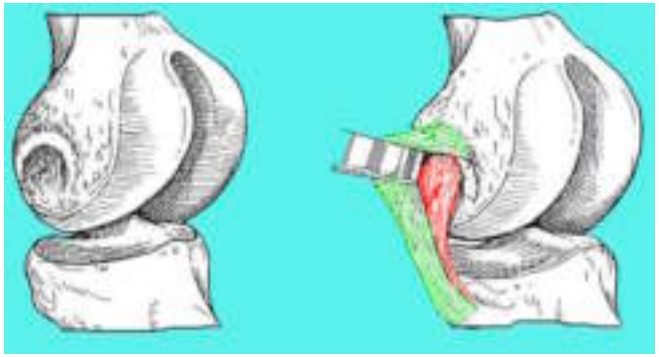


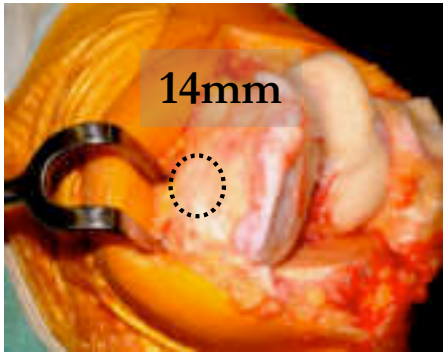


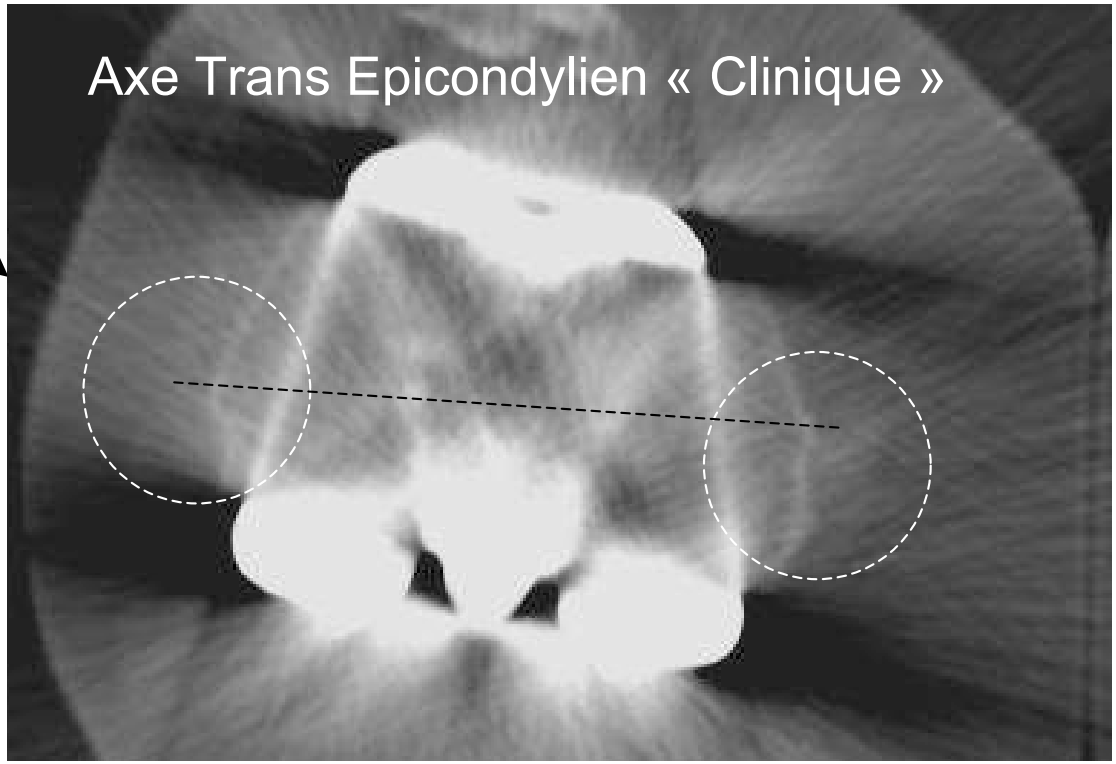


Berger, Griffin, Yoshino

2- Axe Trans Epicondylien

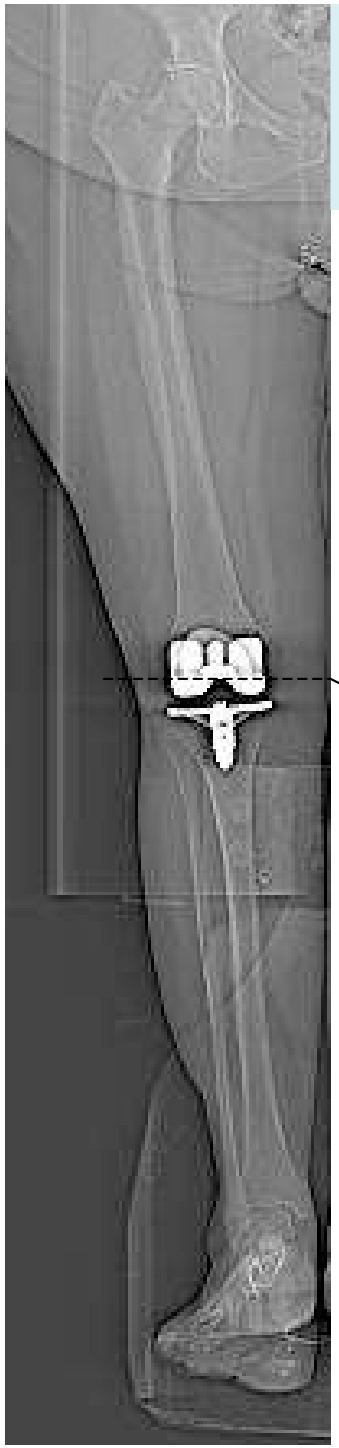


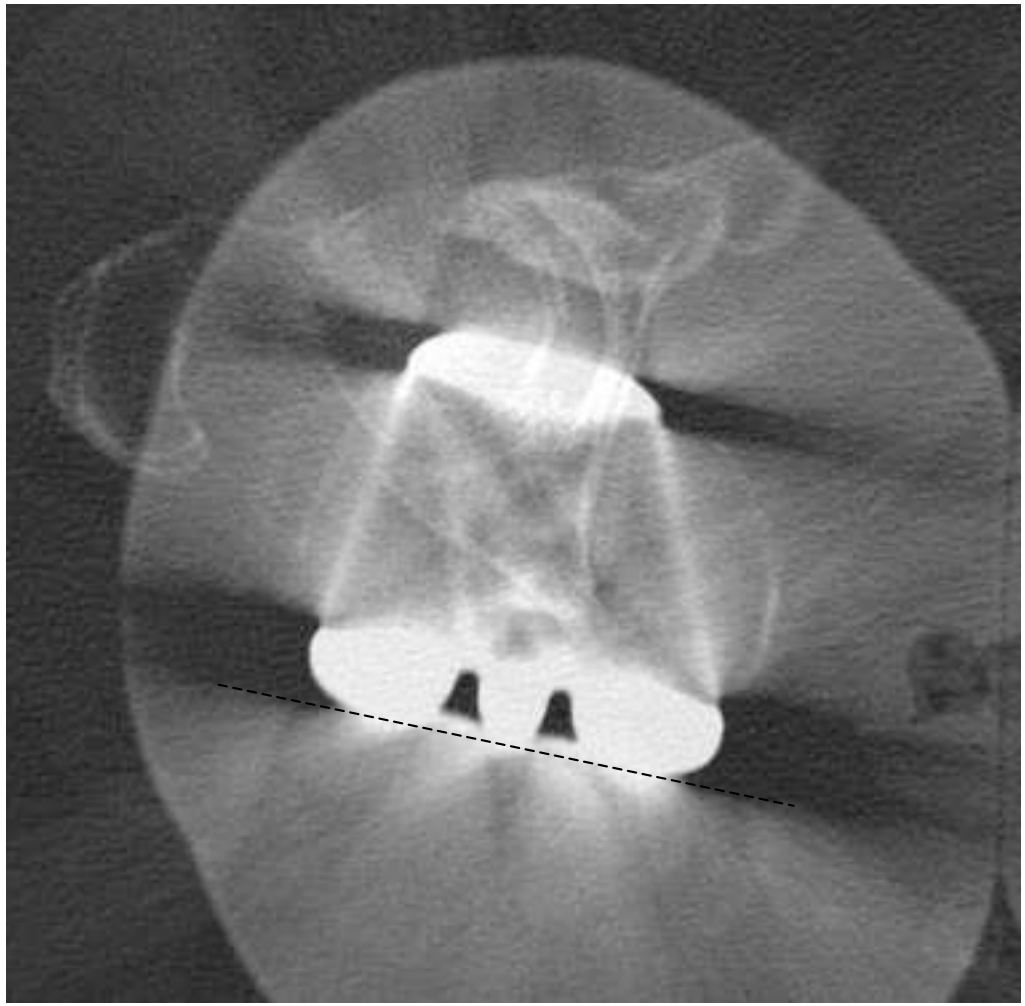




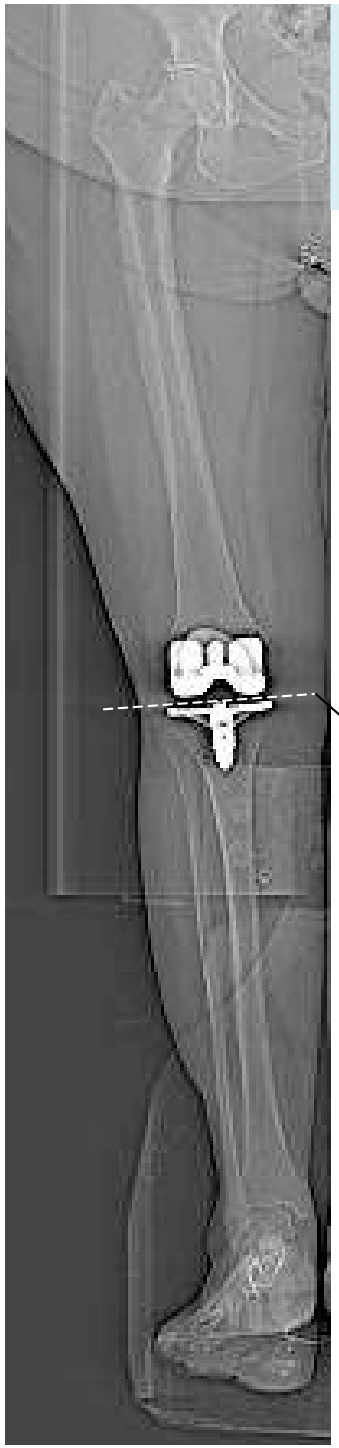
Yoshioka, Stiehl,Akagi

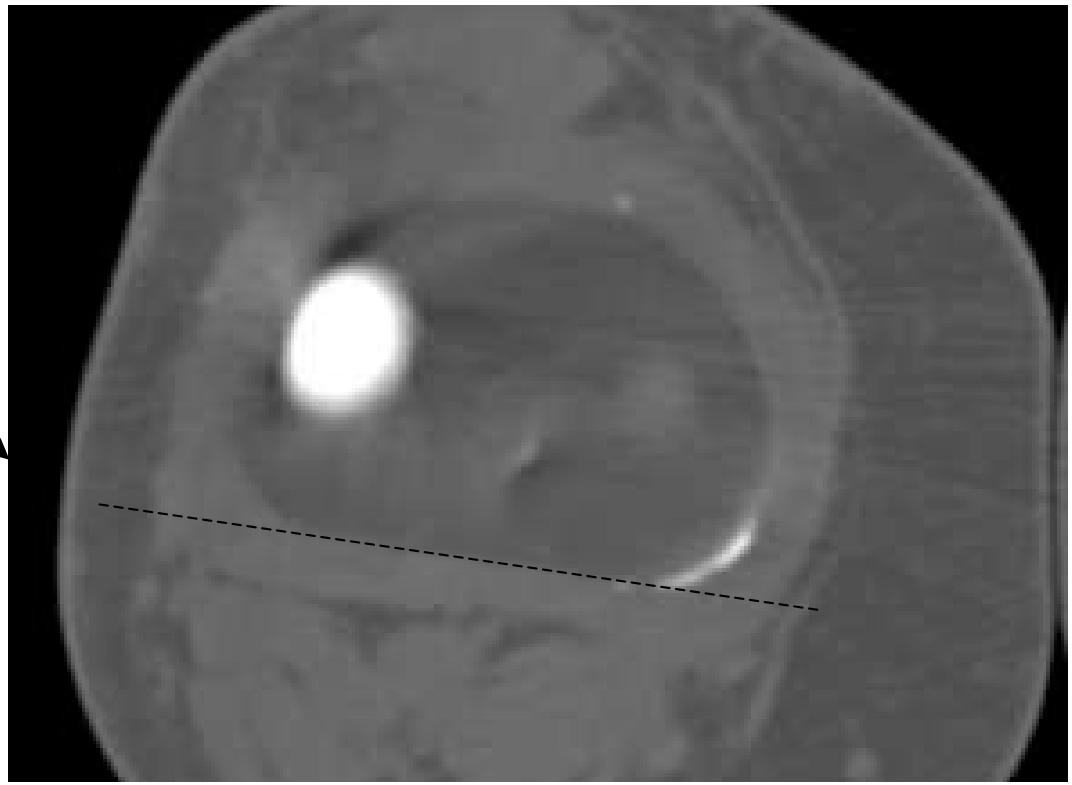
3- Ligne Bicondylienne Postérieure



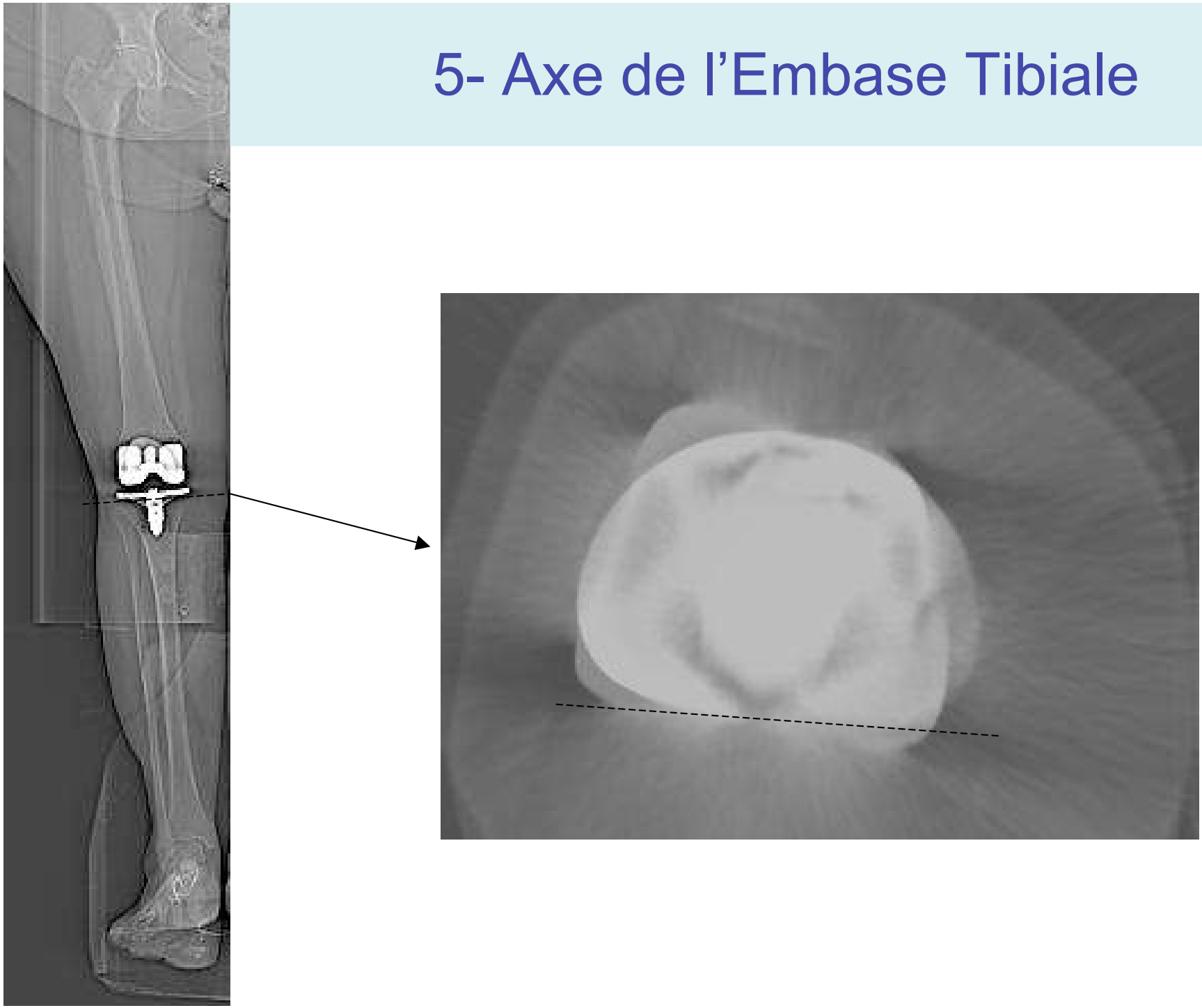


4- Axe du Polyéthylène

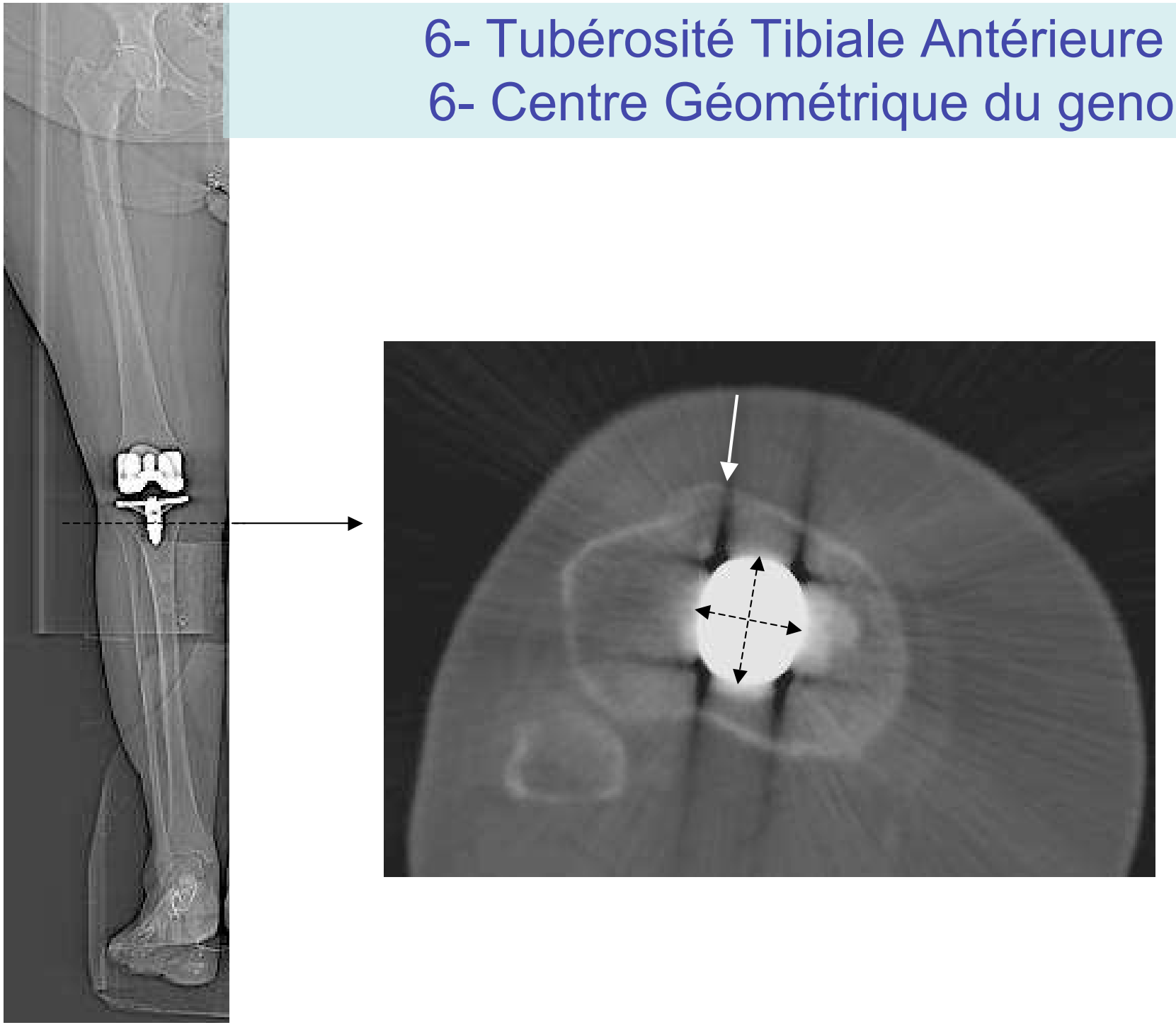




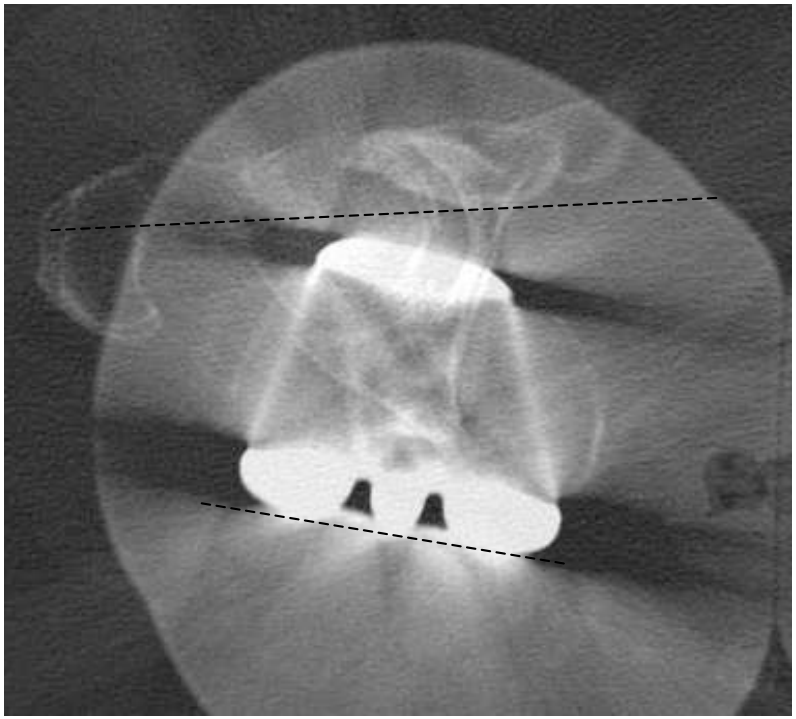
5- Axe de l’Embase Tibiale



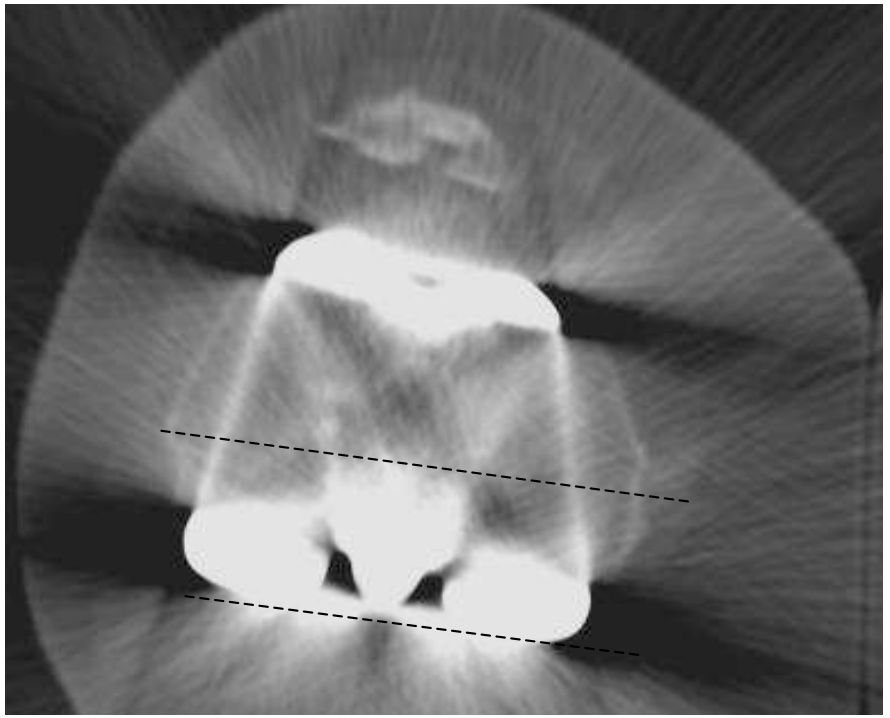
6- Tubérosité Tibiale Antérieure
6- Centre Géométrique du genou



Rotation de la pièce Fémorale/ Fémur



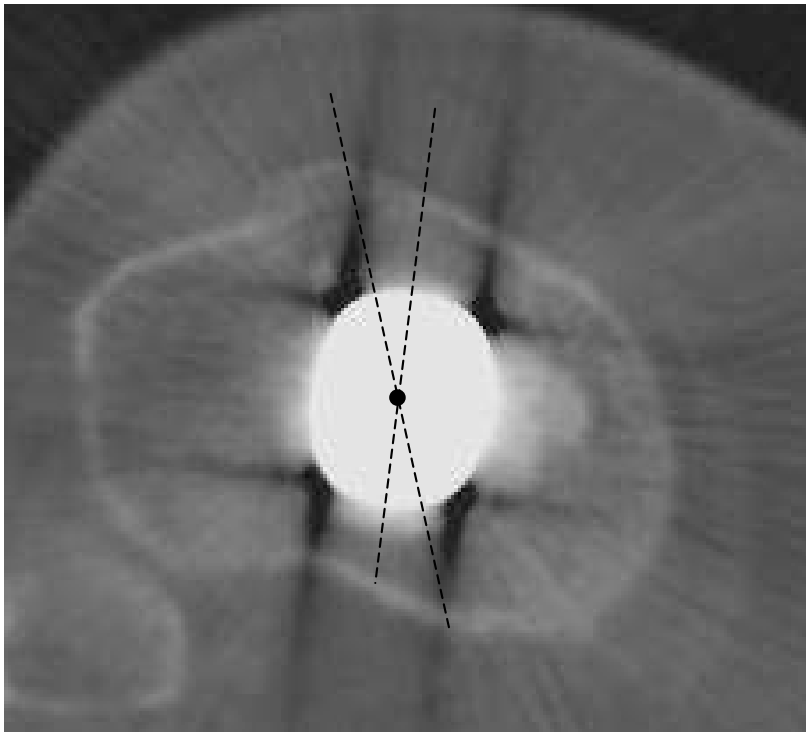
Angle LBC-Col fémoral



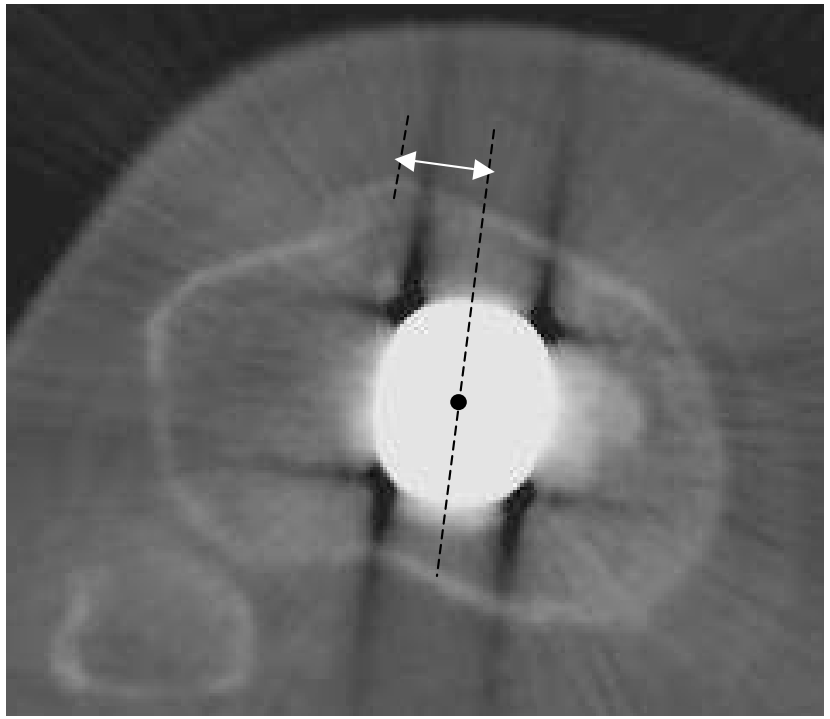
Angle ATE- LBC

Bilatéraux et comparatifs

Rotation de la pièce Tibiale/ Tibia



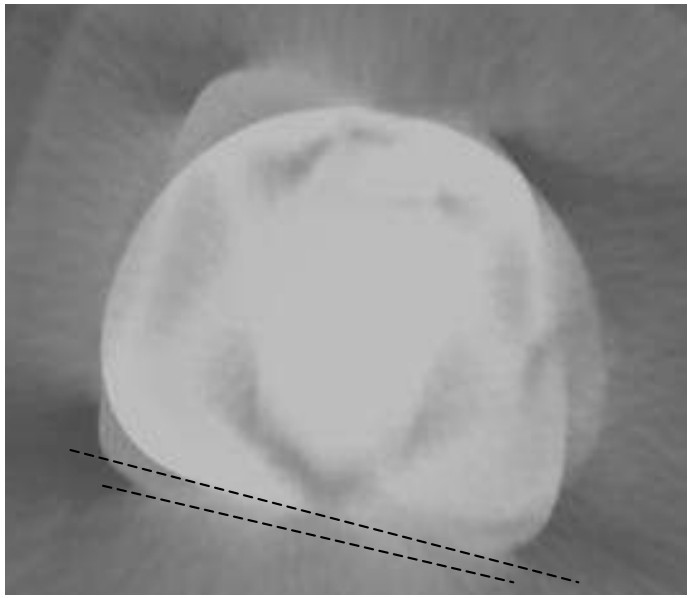
Angle Axe piéce tibiale - axe centre-TTA

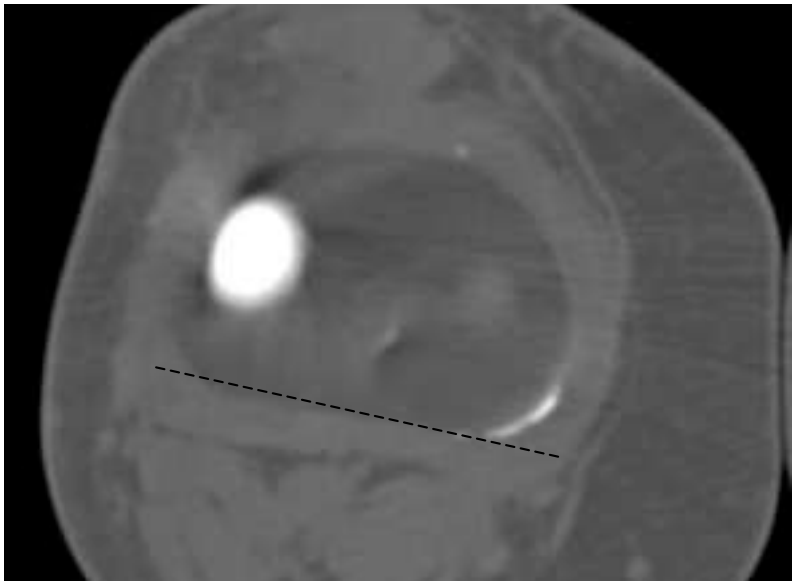


Distance centre embase tiale - TTA

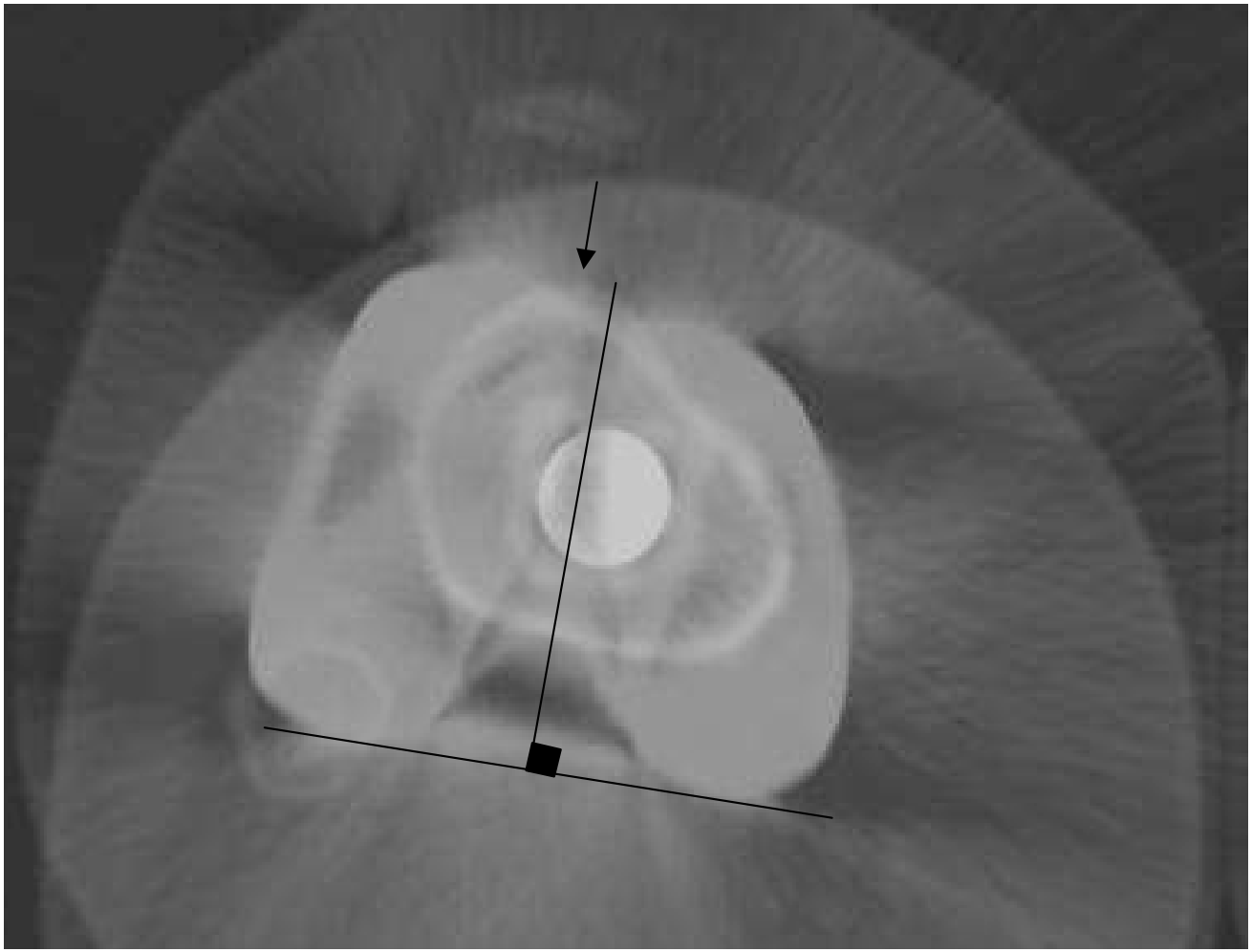
Rotation intra prothétique

- Ligne bicondylienne – Embase Tibiale
- Poly Ethylène – Embase Tibiale

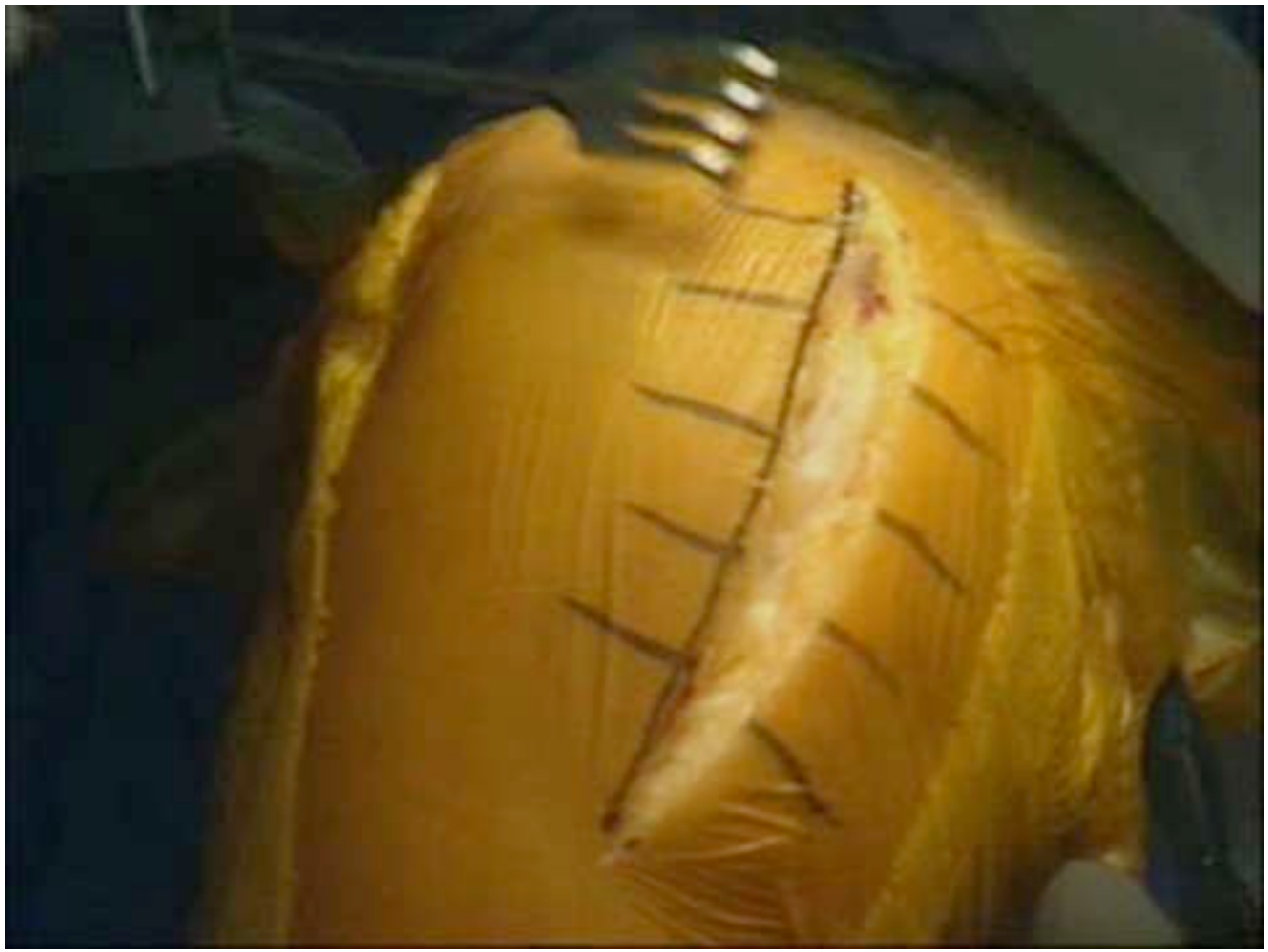




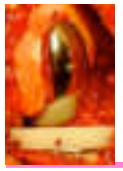
Rotation Globale: TAGT



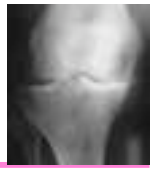
prothèses UNI COMPARTIMENTALE



prothèses UNI COMPARTIMENTALE



La prothèse UNI expose aux échecs

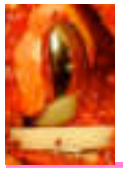


Difficultés techniques ☞ Malpositions

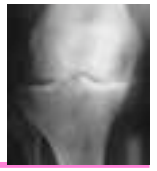
Trop grosse

Malposition

Superstructure



La prothèse UNI expose aux échecs



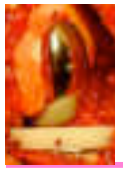
☞Indications prudentes

Enfoncement

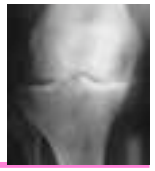
Usure

Bascule

Migration



Taux de survie des UNI



Symposium SOFCOT 1995

Survival rate: 10 years: 67%
15 years: 57%

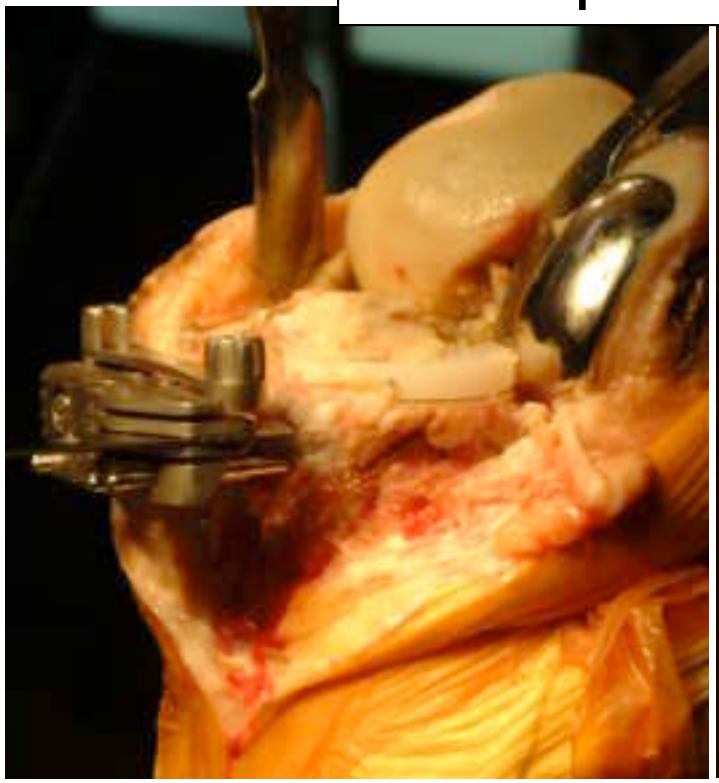
	interne	externe
Laxité	24%	47%
Usure	14%	12%
Descellement	51%	18%

➡ Littérature: survie à 10 ans: 67% à 92%

Cartier 1996 J Arthropl,Hernigou1988 Corr, Scott 1991 Corr, Witvoet 1993 RCO, Lindstrand 1992 Acta Orthop Scand,Murray 1998 JBJS,Koshino TBull Hosp Jt Dis

Reprise d'UNI par PTG

Score fonctionnel / 200
PTG: 162
PTG après PUC: 147

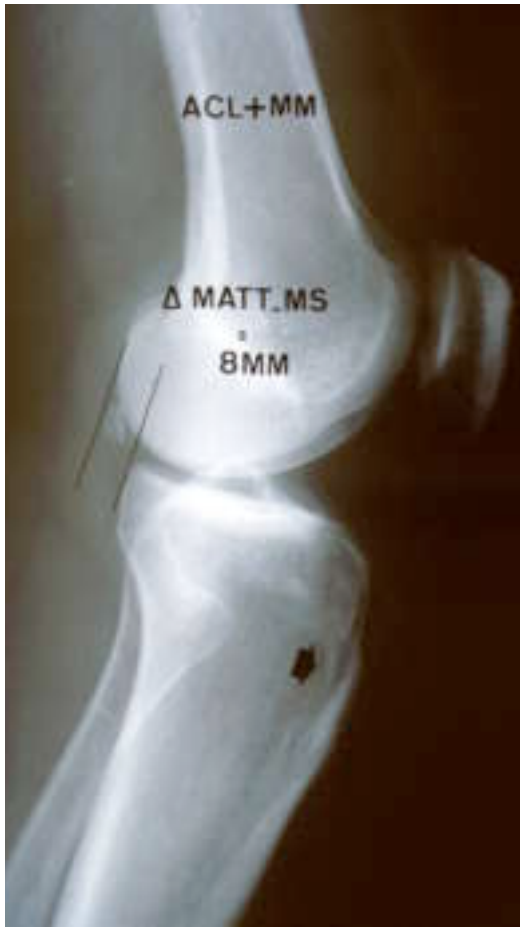


Contre indications des UNI

- **Absence de LCA**
- Déformation extra articulaire > 5°
- Rhumatisme inflammatoire
- Compartiment opposé
- Ostéoporose++
- Surcharge pondérale
- Raideur

Contre indications des UNI

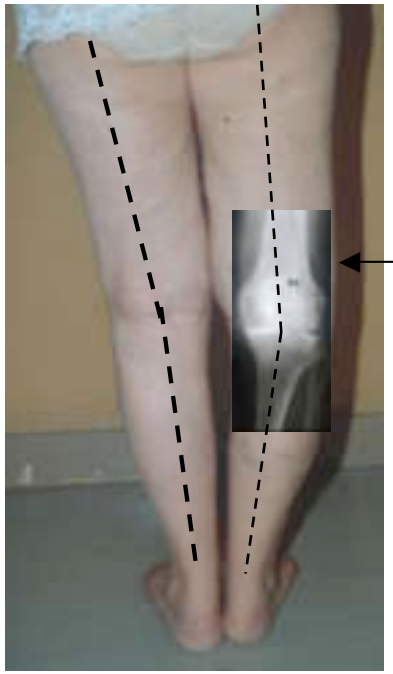
- **Absence de LCA**
- Déformation extra articulaire > 5°
- Rhumatisme inflammatoire
- Compartiment opposé
- Ostéoporose++
- Surcharge pondérale
- Raideur



Contre indications des UNI

- Absence de LCA
- **Déformation extra articulaire > 5°**
- Rhumatisme inflammatoire
- Compartiment opposé
- Ostéoporose++
- Surcharge pondérale
- Raideur

Varus osseux



Varus d'usure

→ OTV ou PTG

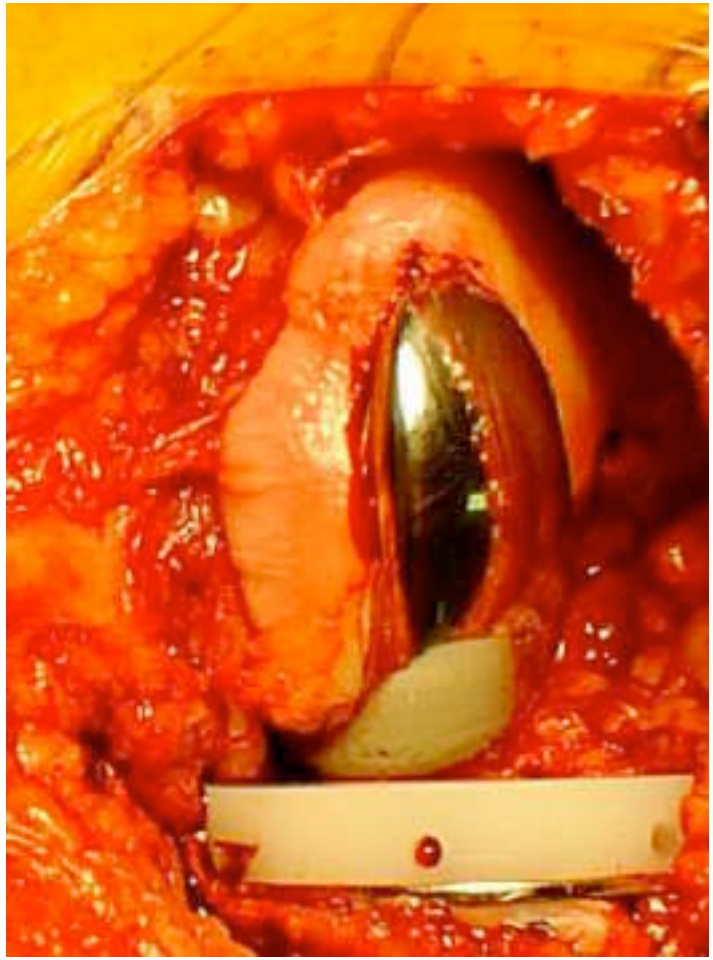
- Varus bilatéral depuis l'enfance
- Varus qd allongé

→ UNI ou PTG

- Déformation asymétrique
- Normoaxée qd jeune
- Normoaxée qd couchée

Contre indications des UNI

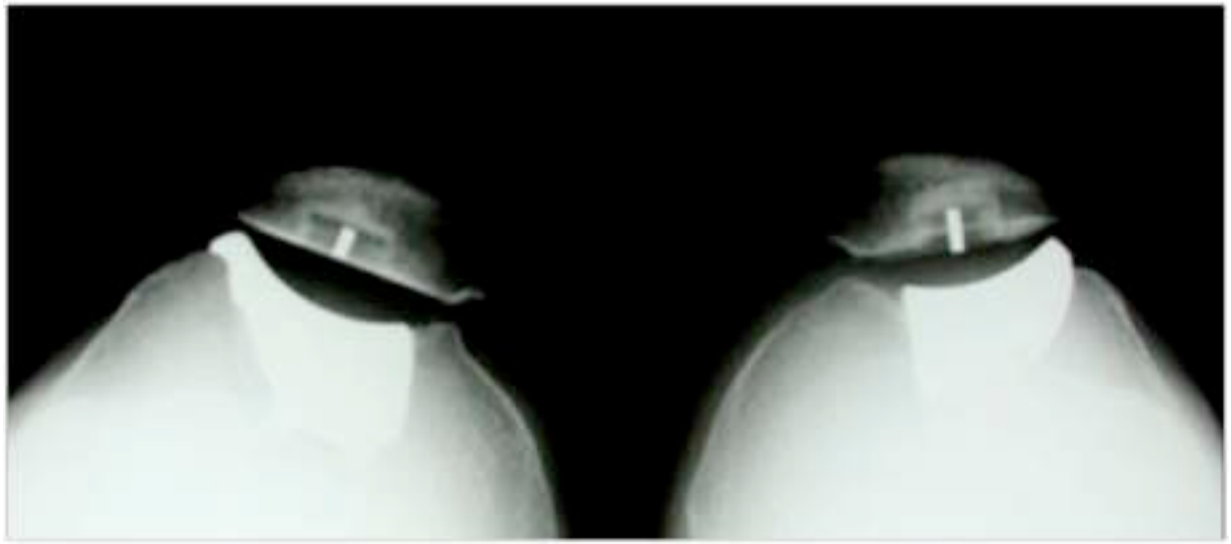
- Absence de LCA
- Déformation extra articulaire > 5°
- **Rhumatisme inflammatoire**
- **Compartiment opposé**
- Ostéoporose++
- Surcharge pondérale
- Raideur



Contre indications des UNI

- Absence de LCA
- Déformation extra articulaire > 5°
- Rhumatisme inflammatoire
- Compartiment opposé
- **Ostéoporose++**
- **Surcharge pondérale**
- **Raideur**

Les prothèses FEMORO-PATELLAIRES



Courbe de Survie : (ablation des implants)

Symposium SOFCOT 2003: 211 PFP

65 % à 10 ans

Les Prothèses contraintes

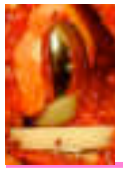
Prothèses avec plot intercondylien

Les Prothèses contraintes

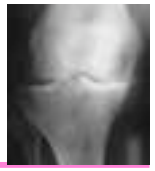
Charnières rotatoires

Les Prothèses contraintes

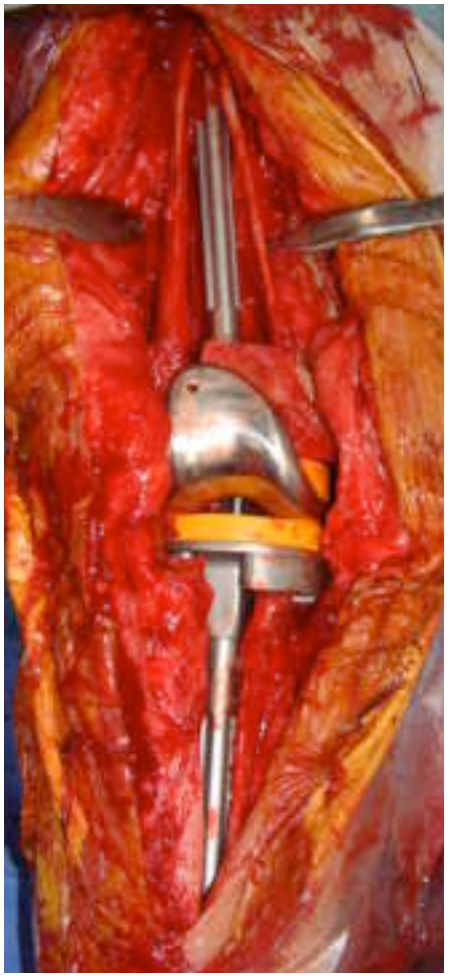
Indications ☞ Lésion ligamentaires majeures

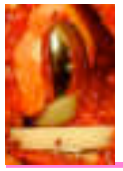


Les Prothèses contraintes

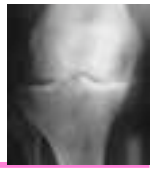


Indications ☞ Reprises dfficiles

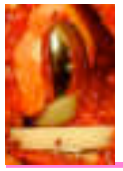




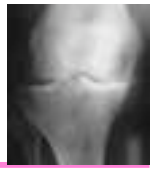
CONSTRAINT ☞ NOT MAGIC



Instabilité résiduelle possible!!!



CONSTRAINT ☞ NOT MAGIC



Contraintes sur l'ancrage ➧ Descellement

Conclusion