Surgical approach to TKA
Post operative course

Speaker:

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Post operative rehabilitation goals

GOALS OF TKA

Pain relief +++
Mobilty - Stability
Quality of life
Improve functional abilities

Mainly based on age and expectations of the patients
INFORM patient before surgery (*what is a reasonable goal*)

Muscular and neuromuscular changes resulting from age and progressive joint degeneration (ex : stairs)

Avoid complications

Medical & Surgical report

MOBILITY (average result : 100-130° in the literarture)
- Pre-operative mobility
- Per operative mobility
- Limitation of ROM during rehabilitation phase ?

Surgical PROCEDURE
- Type of implant
- Associated osteotomy or grafting
- Releases

Weight baring
- Full weight baring
- Transitory restriction

Manage potential post-operative complications

Prevention and early detection

Infection (Knee & urinary tract infections)
Skin necrosis
Thrombophlebitis
Stiffness
Pain / Algodystrophy
Patellofemoral instability
Tibio-femoral instability
Peri-prosthetic fracture

D0 – D10

Priorities	Pain relief Wound healing

Mobility 0-90°
Quadriceps and Hamstrings activation
Self ambulation w. crutches
Stairs climbing / desecending w. cruches

Manual passive patellar mobilization (AP and sagittal)
FLEXION
Decontracturing massage of the quad. Muscle
Manual passive and active
EXTENSION
Triceps and hamstring
Extension postures and manual passive mobilisation
Static contraction of vastus muscle

D10 – D30

Priorities	Complete passive extension Complete active extension

Mobility 0-90°minimum
Complete active extension
Quadriceps and Hamstrings strengthening
Independent deambulation on flat floor
Contnuous stairs climbing / desecending w. cruches and / or banister

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D30 – D90

Priorities — Sesori-motor reprogrammation

Maximum mobility +optimal mobility maintained during activites
Quadriceps and Hamstrings strengthening
Global muscle strengthening
Contrôle of muscle activity and balance during destabilizing exercices

…SELF REHABILITATION

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> D90

Targeted rehabilitation — Persistant deficits

Resumption of physical activities

- Cycling
- Swimming
- Hiking
- Golf
- Sailing
- Hunting ….

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Take in acount the APPROACH

Based on Surgical report & post operative recommandations

Subvastus : early use of the quadriceps tendon
Midvastus : quadriceps contraction
EKLOO Modified : no restriction
Lateral approach : amount of release , associated osteotomy, neurolysis …
ATT osteotomy

Example of ATT osteotomy

Ostéotomie de la tubérosité tibiale antérieure pédiculée sur le muscle tibialis antérior et ostéosynthésée par cerclage circonférentiel dans les reprises de prothèses totales de genou à propos de 65 cas.

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Osteosynthesis with unique circonferential wire
Retrospective study 26 month FU
ATT kept attached to tibialis anterior muscle
Early flexion to 90° and passive immediate extension
65 revision TKA with 39 septic patients (60%)
94 of bony healing
Delay healing : 17 weeks, 19 w in septic group, 12 w in aseptic

Example of ATT osteotomy

Tableau 2 : complications de l'ostéotomie de la TTA dans la littérature

Auteur	N	Fixation	Complications
Piedade et al. (2008)[3]	126	Vissage x2	Fracture TTA n=3 (2,4%) Nécrose cutanée n=4 (3,2%)
Van der Broek (2006) [10]	39	Vissage x3	Migration n=3 (7,6%)
Young et al. (2008) [13]	41	Cerclage trans osseux	Fracture rotule n=2 (4,8%)
Mendes et al. (2004) [2]	67	Cerclage trans osseux	Pseudarthrose n=2 (3%) Migration n=13 (22%) Fracture TTA n=1 (1,4%) Deficit extension n=2 (3%)
Tabutin (2011) [14]	21	vissage	Fracture tibia n=1 (4,7%) Fracture TTA n = 2 (9,5%) Nécrose cutanée n= 1 (4,7%)
Whiteside (1995) [15]	136	Cerclage trans osseux	Fracture TTA n=2 (1,5%) Fracture tibia n=3 (2,2%) Douleur TTA n=3 (2,2%)

Example of ATT osteotomy

Tableau 1 : résultats après ostéotomie de la TTA

	Pré opératoire	Post opératoire	Valeur de p
Arc de mobilité moyen	88° ± 27,3°	103° ± 32,3°	**$p<10^{-5}$**
Deficit d'extension active	n = 2 (7,6%)	**<10°** : n=4 (6,3%) **30°** : n=1 (1,5%)	p=0,43 (NS)
Flessum	**< 10°** : n = 6 (11%)	**< 10°** : n = 7 (11%) **entre 10° et 20°** : n = 3 (4,7%)	p=0,38 (NS)
Hauteur patella (IBP)	n= 58 normales n= 5 hautes	n = 54 normales n = 9 hautes	**p=0,21** (NS)
IKS	*genou* : 51,3 ± 19,7 *fonction* : 37,2 ± 21,3 *global* : 88,5 ± 20,5 *groupe septique* IKS global : 78,7 ± 5,9 *groupe non septique* IKS global : 104 ± 7,4	*genou* : 82,7 ± 15,2 *fonction* : 58,2 ± 18,6 *global* : 140,9 ± 16,7 *groupe septique* IKS global : 132,2 ± 7,1 *groupe non septique* IKS global : 145 ± 4,1	**$p<10^{-5}$** **$p<10^{-5}$** (entre les 2 groupes en pré op) **p<0,0003** (entre les 2 groupes en post op)

IBP : index de Blackburn et Peel
NS : non significatif

GENERAL PRINCIPLE BUT … NO UNIQUE PROTOCOLE

Depending of surgeon's:

- Technique
- Experience
- Confidence
- Protocole (« rapid recovery »)

Depending on patient

- Initial desease (m. contracture, stifness, deformity …)
- Condition, age …
- Muscular capability

MUST BE CLEARLY ADJUSTED TO EVERY PATIENT

GENERAL CONCLUSION

Philippe & Francois

- Menisectomy in degenerative knees
- Pes anserinus tendinopathy
- Partial ACL reconstruction
- Post operative course (rehabilitation)
- Genu valgum deformity

- 1 talk every day
- 2 talks on the only sunny day … full of snow

I have a question ?

Are you testing me ???????

Thank you
Merci