

**Diagnostic algorithm**  
**“Unhappy total knee arthroplasty”**



Last Name: \_\_\_\_\_

Surname: \_\_\_\_\_ D.O.B.: \_\_\_\_\_

Study-No.: \_\_\_\_\_

Sex:  female  male

height: \_\_\_\_\_ cm      weight: \_\_\_\_\_ kg

**Medical history**

Side:  right  left

**Previous surgery:**

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_

others: \_\_\_\_\_

Date of primary TKA: \_\_\_\_/\_\_\_\_/\_\_\_\_

Hospital primary TKA: \_\_\_\_\_

Surgeon primary TKA: \_\_\_\_\_

Skin incision:  medial  median  lateral  others: \_\_\_\_\_

OT of tibial tubercle yes  no

Approach:  medial parapatellar  medial mid-vastus  medial sub-vastus  lateral parapatellar  lateral subvastus  MIA quadriceps muscle sparing  MIA midvastus  MIA subvastus

others: \_\_\_\_\_

Type TKA: \_\_\_\_\_

- femoral cemented  femoral uncemented
- tibial cemented  tibial uncemented  patella resurfacing
- stems femoral  stems tibial  cones  sleeves  wedges

Type UKA: \_\_\_\_\_

- femoral cemented  femoral uncemented
- tibial cemented  tibial uncemented

Type PFJ: \_\_\_\_\_

Main problem:  Pain  Instability  Swelling  Stiffness  Others:

\_\_\_\_\_

**Pain**

Pain before TKA, UKA or PFJ: \_\_\_\_\_

\_\_\_\_\_

Pain free interval after surgery: yes  no

If yes how long and when? \_\_\_\_\_

Current pain different than before surgery?  yes  no

satisfaction VAS (0-10) \_\_\_\_ total pain VAS (0-10) \_\_\_\_

Pain character:  dull  pulsatory  burning  electrifying  shooting  
 sharp  crampy  dragging pain  
 general hyperalgesia

Weight bearing pain  yes  no VAS (0-10) \_\_\_\_\_

Pain at toe off while walking  yes  no VAS (0-10) \_\_\_\_\_

Pain at rest  yes  no  VAS (0-10) \_\_\_\_\_

Pain at night  yes  no VAS (0-10) \_\_\_\_\_

Provoking factors: \_\_\_\_\_

Alleviating factors: \_\_\_\_\_

Localisation: \_\_\_\_\_



**Medial**



**Lateral**



**Anterior**



**Posterior**

Radiating pain in:

Femur  medial  lateral  median

Tibia  medial  lateral  Hoffa fat pad

Radiating pain from:  Lumbar spine  Hip

**Medication**

Pain medication:  NSAR  Morphin  Paracetamol  others

Antidepressives:

*Anticoagulants*

Coumarin/Warfarin yes  no  Aspirin yes  no  Clopidogrel  
yes  no

Others: \_\_\_\_\_

**Other medical diagnoses:**

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_
- 7. \_\_\_\_\_
- 8. \_\_\_\_\_
- 9. \_\_\_\_\_
- 10. \_\_\_\_\_

**Postoperative follow-up**

MUA yes  no  Mobilisation arthroscopically yes  no

Problems wound healing yes  no  Antibiotika notwendig yes  no

if yes what? \_\_\_\_\_

Reoperation yes  no  if yes what?

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**Clinical examination**

*Inspection*

Mobilisation: 1 crutch  2 crutches  wheel-chair

Limping gait: yes  no

Weakness of extensor apparatus: yes  no

Limb alignment:  neutral  Varus  Valgus

Rotation of foot:  normal  IR  ER

Toe gait- varus thrust: yes  no

Heel gait- varus thrust: yes  no

Kneeling possible: yes  no

Squatting possible: yes  no

Skin incision/Scars:



Erythema if yes where? \_\_\_\_\_

- Swelling if yes where? \_\_\_\_\_
- Sinus if yes where? \_\_\_\_\_
- Skin discoloration: \_\_\_\_\_

*Palpation*

Tenderness if yes where? \_\_\_\_\_

- parapatellar lateral  joint line medial  joint line lateral  Pes anserinus
- Patella proximal  Patella distal  Hoffa  Olliotibial tract

Tinel sign: yes  no

crepitation:  retropatellar  iliotibial tract  MCL  LCL

*ROM*

Active flexion/extension \_\_\_\_/\_\_\_\_/\_\_\_\_

Passive flexion/extension \_\_\_\_/\_\_\_\_/\_\_\_\_

- hyperextension  flexion contracture  extensor lag

Patella tracking normal- if not: \_\_\_\_\_

*Others*

Hip joint problem: yes  no

Lumbar spine problem: yes  no

*Stability testing*

Varus-valgus near extension  medial +/++/+++  lateral +/++/+++

Varus-valgus in 30°flexion  medial +/++/+++  lateral +/++/+++

Mid-flexion instability yes  no   medial  lateral

Anterior laxity in 90° flexion +/++/+++

Posterior laxity in 90° flexion +/++/+++

**Radiographs before TKA/UKA/PFL**Varus Deformity yes  no  Valgus Deformity yes  no 

Anatomical tibial varus-valgus: \_\_\_\_\_

Anatomical femoral varus-valgus: \_\_\_\_\_

Tibiofemoral angle : \_\_\_\_\_ Tibial slope : \_\_\_\_\_

OA  medial  lateral  patellofemoral

Kellgren-Lawrence classification (0-4):

medial \_\_\_\_\_ lateral \_\_\_\_\_ patellofemoral \_\_\_\_\_

Osteonecrosis: yes  no 

Comments?

**Radiographs after TKA/UKA/PFJ**Tibia:  varus  valgus  neutralTibial slope:  anterior  posteriorTibial overhang:  medial  lateral  anterior-posteriorFemur:  varus  valgus  neutral  flexion  extension  not-chingSize:  Undersized  normal  OversizedPatella:  baja  normal  altaOversizing:  anterior-posterior  medial  lateral

Posterior condylar offset (mm): \_\_\_\_\_

Signs of loosening: yes  no PAO: yes  no **Stress radiographs/Fluoroscopy in comparison to contralateral side**

in extension medial \_\_\_/\_\_\_° lateral \_\_\_/\_\_\_°

in 30° flexion medial \_\_\_/\_\_\_° lateral \_\_\_/\_\_\_°

90° ap radiographs:

Anterior translation in mm \_\_\_/\_\_\_

Posterior translation in mm \_\_\_/\_\_\_

30° ap radiographs:

Anterior translation in mm \_\_\_/\_\_\_

Posterior translation in mm \_\_\_/\_\_\_

**99mTc-HDP-SPECT/CT**

Analysis using OrthoExpert ©

Determination of TKA/UKA/PFJ component position in 3D-CT:

Femur

Varus (+) / Valgus (-) \_\_\_ Flex (+) / Ext (-) \_\_\_ IR(+) / ER(-) \_\_\_

Tibia

Varus (+) / Valgus (-) \_\_\_ slope ant (+) / post (-) \_\_\_ IR(+) / ER(-) \_\_\_

SPECT component

Loosening:  femoral  tibial Impingement  Malposition

Infection  Patello-femoral OA  PAO

Oversizing  Undersizing  Granuloma

Others: \_\_\_\_\_

**Anti-Leucocyte-SPECT/CT**

Infection: yes  no

Remarks: \_\_\_\_\_

**Lab work**



CRP \_\_\_\_\_ WBC \_\_\_\_\_ ESR \_\_\_\_\_ IL-6 \_\_\_\_\_  
Procalcitonin \_\_\_\_\_

**Joint aspiration:** WCC \_\_\_\_\_ PMN diff \_\_\_\_\_ Gram stain + / -

Culture : \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**Arthroscopy**

Histology: \_\_\_\_\_

Biopsy: \_\_\_\_\_

Culture: \_\_\_\_\_

**Differential diagnoses before revision surgery:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**Intraoperative findings:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**Diagnoses after revision surgery:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_