

Diagnostic Algorithm for the Assessment of Patients Suffering from Pain Following Total Knee Arthroplasty

1) Chronological evaluation of complete medical history

- All previous surgical reports, imaging/laboratory tests, previous surgeries on affected joint, complications/comorbidities, implanted prosthesis social, recreational and occupational history

2) Type of pain analysis

- Time, onset, location, quality and reproducibility of pain; comparison of type of pain before primary TKA and postoperative pain

3) Psychological exploration

- Patients with persistent pain 6 six months are classified as chronic pain patients who need to have psychological care

4) Clinical examination

- Active and passive range of motion, swelling state, stability, scars, skin changes, signs of infection, patellar tracking, extensor mechanism and trigger points. Exploration of lumbar spine, hip, ankle and foot, as well as a neurovascular status, should be included in the analysis of painful TKA. In particular, radicular pain has to be distinguished from referral pain

5) Infiltration

- Infiltration of painful tender points on the knee joint using local anesthetic is used to assign anatomical structures. Following an aspiration, a local anesthetic should be injected intra-articularly if the fluid does not macroscopically present any typical signs of infection

6) Laboratory tests

- ESR and CRP: routinely used for infection clarification. Serum IL-6 levels play a more important role for the early postoperative period, since it covers an area by a rapid rise and fall

7) Aspiration

- Testing synovial fluid is mandatory for suspected infection. Leukocyte count, culture of bacteriological tests for aerobes and anaerobes should be cultured. Antibiotic therapy should be stopped at least two weeks before a planned aspiration, which should be performed without local anesthetics under sterile conditions. Positive culture findings must be compared with clinical symptoms and serological tests

8) Radiographic analysis

- Full leg x-ray, lateral x-ray and axial patella view, performed under load (weight bearing view)

9) Special imaging

- Scintigraphy should be used as a tool of diagnosis. If there is concrete evidence of loosening or overloaded prosthesis-bone-interface, a Technetium-99m scintigraphy can be conducted (not practical before 1 year postoperative). CT should be used when periprosthetic fissures or malrotation of the tibial or femoral component are suspected

10) Conservative therapeutic trial

- If no clear cause of failure can be verified. Should take at least 3 months and include analgetic therapy, support through technical orthopedic aids and adequate physiotherapy