



Orthopaedic surgery



OSTEOARTHRITIS OF THE KNEE JOINT

Deterioration of the cartilage surfaces are called osteoarthritis. The most frequent causes are degeneration due to age, metabolic disorders like gout or diabetes, chronic inflammatory diseases like rheumatoid arthritis or posttraumatic disorders after fractures or severe ligamentous injuries. Medial and lateral compartment as well as the femoropatellar joint may be affected. In case of severe osteoarthritis arthroscopic procedures alone will not be sufficient for treatment and open surgery will be necessary.

Axial malalignment

Mostly the osteoarthritis is localized at the inner aspect of the knee joint and due to the loss of cartilage a varus-malalignment is present. The patients suffer from pain during weight bearing and rest. Pain at night and chronic swelling are the common feature. Over the years the range of movement decreases and the patients have to adapt to a lower activity level. The actual malalignment leads to permanent mechanical overload of the involved compartment and to further abrasion of cartilage. The x-ray in monopodal stance shows the deformity and narrowing of the joint space. In cases where the medial compartment is affected, the deformity is called varus-malalignment and where the lateral compartment is affected it is called valgus-malalignment. Mainly this type of osteoarthritis is caused by former total or subtotal meniscectomies in combination with chronic joint laxity, age related degeneration, congenital malalignment and posttraumatic disorders. If these deformities are neglected, the osteoarthritic joint will inevitably develop final osteoarthritis, which will need total knee replacement (TKR).

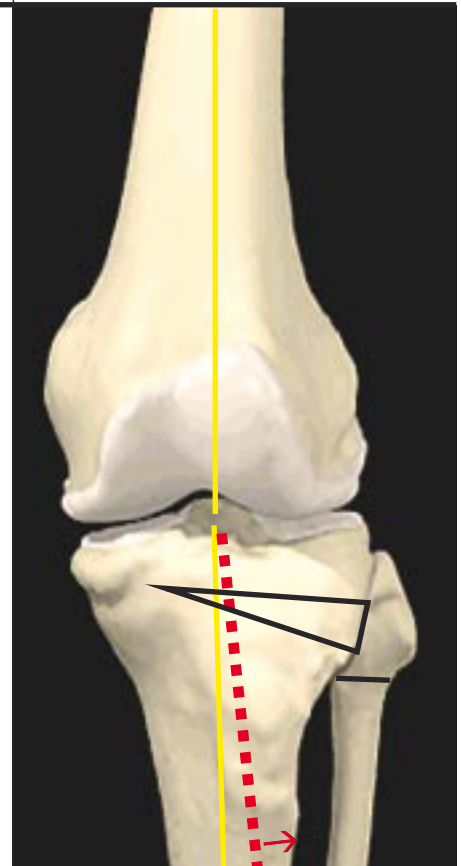
Operative correction of axial malalignment

The main principle is to restore a normal mechanical and an anatomical axis with a well balanced mechanical load, which may eliminate pain and improve joint function. The natural joint is spared, the progression of osteoarthritis will be considerably slowed

down and TKR can be avoided in many cases. Since varus-malalignment is the most frequent deformity, high tibial osteotomy is the most frequent corrective procedure in our hands. A partial wedge is resected at the lateral aspect of the tibia and the fibula is cut. By closing the bony defect after wedge resection, the correction of the malalignment is achieved and the tibia is fixed with a plate. Since the medial cortex stays intact and the lateral side of the tibia is solidly fixed with a plate, partial weight bearing is allowed and bone healing is achieved routinely after 4 to 5 weeks. Then an x-ray will be taken and increased weight bearing is allowed. The patients are able to walk without crutches routinely after 6 weeks. At the same occasion of the osteotomy an arthroscopy is made and treatment like partial meniscectomy, abrasion, arthroplasty or even ACL-reconstruction is possible. For high tibial osteotomy (HTO) the patients are hospitalized for about one week.

Rehabilitation

Physiotherapy is started from the first postoperative day with functional treatment, continuous passive motion (CPM) and muscle exercises. The patients are mobilised with 2 crutches and partial weight bearing up to 40 kg is allowed. After 4 weeks an x-ray is taken and more weight bearing is possible. Normally, the patients are off their crutches after 6 weeks.



- correction of malalignment-principle
1. resection of the partial wedge at the lateral knee aspect
 2. change of alignment
 3. fixation with a plate



- restoring of varus-malalignment left knee
- arthritis with narrowing of medial joint space
 - fixation of restored alignment with a plate