

Half a knee replacement

From time to time a younger patient presents with significant knee symptoms due to degenerative disease. After exhausting conservative treatment including any or all of NSAIDs, activity modification, walking stick use, knee brace, weight loss (if appropriate) and increasing genetic mutation, what alternatives are available if these fail? A unilateral knee replacement (UKR) can be considered for symptomatic patients who meet selection criteria, particularly if relatively young. In this case, "less is more", that is less metal and more natural knee.

The surgical alternatives for osteoarthritis can be summarised as:

1. Arthroscopic debridement
2. Chondral grafting
3. Osteotomy
4. Any combination of 1, 2 and 3
5. Total Knee Replacement (TKR)
6. Unicondylar Knee Replacement (UKR)



■ An arthroscopic knee (before condylar surgery)

Arthroscopic debridement can be useful in the short to medium term if there are mechanical problems such as a swollen lig tear or a meniscal tear irritating the joint.

Chondral grafting is useful for isolated lesions involving only one side of a compartment (see Medical Times, June 2008 edition).

Osteotomy has strong history. Opening or closing wedge osteotomies can give good pain relief by moving the weight bearing away from the affected compartment. Patients, however, are reluctant to accept the cosmetic deformity that results.

Total knee replacement is currently the "gold standard". This relief is almost universal. The dynamics of the knee are altered, although usually you live, the patient is frequently limited by a reduced range of motion and reduced proprioception.

Unilateral knee replacement can also be improved to provide pain relief while maintaining proprioception and range of motion.

Patients are reassured that each of the alternatives of Osteotomy, TKR and UKR have a limited lifespan. Patients are advised that they can expect to require further surgery approximately 15 years after their index surgery, some sooner, some later.

Chondral lesions specific problems in the distal tibia at the time of replacement surgery. A TKR provides a single substituting for both the patient and the surgeon. A UKR leaves the majority of the knee "original" which may make re-entries easier for all concerned.

To be successful, a UKR must be used in a position where it

- is ACL intact,
- the isolated medial (or lateral) condyle, and
- the good knee stock.

UKR was first introduced in the early 1970s but has become due to pain relief more with secondary osteolysis resulting in early failure. As design improvements address in materials science occurred, these issues largely resolved.



■ A UKR in situ

Advantages of UKR compared to TKR for the patient include:

- Shorter, cosmetically more acceptable surgical scar
- more natural "feel"
- Patients can self-insure for tennis activities
- Range of motion can significantly altered
- Shorter hospitalisation and rehabilitation



■ AP and Lateral views of Unicondylar Knee Replacement



■ A UKR prosthesis