

Options for the active patient with OA

16th August 2011

By Doron Sher |

0 Comments

Total knee replacement works well in older patients with osteoarthritis (OA) but can lead to serious long-term problems with loosening and bone destruction in younger patients. Once the arthritic process starts, it can never be halted or reversed, but progress can be slowed and symptoms improved with both surgical and non-surgical treatments.

Non-surgical management includes activity modification, NSAIDs, injections, supplements and bracing. These all eventually fail and arthroscopic debridement, high tibial osteotomy (HTO), unicondylar knee arthroplasty (UKA) or total knee arthroplasty can allow younger patients to maintain an active, healthy lifestyle. The goals of all these options are to decrease pain and improve function. Some may also have a disease-modifying effect by altering the mechanical environment of the knee (slowing down but not stopping the process).

Exercise

Exercise has been shown to reduce pain and improve function in patients with early OA. This should be non-impact loading, and swimming, cycling and hydrotherapy are preferred to running/jogging exercises.

Muscle strengthening can help improve a specific functional loss but aerobic exercise leads to better long-term outcome and is therefore preferred. If the patient loses weight as part of the exercise program their symptoms will also improve. Unfortunately, the beneficial effects of exercise are lost six months after the exercise is terminated.

Bracing

Bracing for medial unicompartamental disease can reduce pain and improve function but these benefits are lost immediately if the brace is not worn. Bracing reduces the biomechanical load on the bone, so the patient's deformity must be passively correctable for this to work. There is conflicting evidence regarding the use of foot orthoses for arthritis and in my experience they rarely work.

NSAIDS

Many patients can use NSAIDS safely for a long time. Serious gastrointestinal side effects have been reported in 2–4% of chronic NSAID users, and this is halved with COX-2 drugs. In my experience, the 'safer' drugs are less effective for more advanced stages of arthritis and patients may need to try different NSAIDS to see which works best.

Injections

The injection of hyaluronic acid into the knee joint should help early OA because of a combination of its viscoelastic properties as well as its anti-inflammatory, anabolic, analgesic and chondroprotective potential. Some people believe it breaks the complement cascade. Most studies show that it works as well as NSAIDS and steroid injections but tends to last longer. In general, injections should be used to provide short-term pain relief for patients with a flare-up of their arthritis.

Arthroscopy

Arthroscopic debridement and washout is no better than optimised medical therapy unless the patient has a specific meniscal tear which can be resected. The patient who will benefit from the procedure typically has a sudden change in symptoms and is able to localise the pain specifically to the medial joint margin.

Up to 75% of patients have an initial benefit following arthroscopic debridement but about 10% progress to a knee replacement within one year and as few as 44% have a clinically significant reduction in pain.

High Tibial Osteotomy

The basic premise of HTO is to redirect the mechanical axis from the worn area of the joint to a relatively normal compartment. Patients do not need to modify their activity levels and so this procedure is used for those who wish to remain active in

high-load activities. Contraindications to HTO include significant degeneration of the other knee compartment, inflammatory diseases (e.g. rheumatoid arthritis), obesity, patellofemoral disease, loss of motion and an older age group.

Unicompartmental Knee arthroplasty (UKA)

The indications for UKA have changed significantly in the past 10 to 15 years. Classically, low-demand patients aged >60 years who have a low BMI, intact ligamentous structures and isolated medial compartment OA, but who have no flexion or extension contractures, are candidates for UKA. Unfortunately, these indications were not followed very closely and so there has been an unacceptably high revision rate for these prostheses in Australia in the last decade. UKA should only make up 5–10% of knee replacement surgery.

Total Knee Replacement

Results of knee replacement have continued to improve with better polyethylene quality and prosthesis design. This has led to survivorship rates of 90% at 10–15 years, as well as better pain relief and functional improvement. There are good clinical results with long-term follow-up in older persons but we are unsure how well these new prostheses will function with the demands placed on them by younger and more active patients. Therefore, total knee replacement is usually reserved as a final treatment option.

Summary

The treatment of OA of the knee in the young, active patient remains a challenge. Initial non-surgical management will improve symptoms but will not dramatically alter the natural history of the disease process. Surgical treatments (following close indications) offer patients a good potential solution for their arthritis and allow for a return to some athletic activities.

Treatment should be guided based on the patient's symptoms, and care must be taken to ensure the patient's expectations are realistic. Once all other treatments have failed, total knee replacement remains the final common pathway to relieve the pain of arthritis.