Unsteady foundations

A middle-aged builder develops a problem that could threaten his livelihood

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By Dr Doron Sher |

Bernard is an active, 50-year-old male. He works as a builder and enjoys a weekly game of touch football with his friends.

Over the past few years, he has had increasing pain at the medial aspect of his right knee.

The pain gradually worsens the longer he is on his feet, and is well-localised to the medial joint margin.

He notices occasional swelling of the knee, but this is not his main complaint.

The pain responded well to NSAIDs initially, but they are becoming somewhat less effective over time and he is worried about taking them indefinitely.

Examination

Clinical examination shows that his right knee is in slight varus as he stands and walks.

Today he is not in much pain, as he has taken the morning off to see the GP, and thus he is not limping. He says that on a bad day, he does develop a limp.

His range of motion remains very good at 0-125 degrees.

There is a small effusion present on the swipe test, and the medial joint margin is tender. The knee is stable with negative Lachman and anterior drawer tests.

Investigations
The GP refers him for a standard X-ray series of his right knee (anterior-posterior, weight-bearing, lateral, notch, skyline patella — as recommended by the Australian Orthopaedic Association), which shows medial compartment osteoarthritis, with his lateral and patellofemoral compartments normal.

Management
Since this is a chronic presentation, without a history of a recent meniscal tear, an MRI scan is not warranted. The GP initiates the standard treatment for osteoarthritis.

This is regular paracetamol, NSAIDs on a PRN basis and blood tests to check FBC, EUC and LFTs, due to long-term NSAID use. Bernard is referred for physiotherapy.

Bernard calls a few weeks later to say his knee has flared without a specific injury. He comes in, and the GP administers an intra-articular local anaesthetic injection, which gives him excellent relief for about a month before the pain returns.

Referral
Bernard is referred to an orthopaedic surgeon. After review, Bernard is referred for a standing X-ray from the hip to the ankle to assess his weight-bearing axis, which has shifted from the centre of the knee into the medial compartment, as the knee has gone into varus.

The surgeon discusses the use of a valgus unloading brace with Bernard. He explains that the brace works well for some people, but when it is removed it stops working.

Bernard decides not to try the brace, a common reaction, as he is looking for a more permanent solution.

Surgery options
Treatment options at this stage are limited. Bernard has maximised his non-surgical management. The surgeon explains that arthroscopy will not help him.

His activity levels mean he will not be satisfied with a total knee replacement, and a joint replacement is also likely to create significant motion loss.

A uni-compartmental knee replacement is contraindicated because he wishes to

keep running.

Bernard is not overweight and is a nonsmoker, and is therefore a candidate for a high tibial osteotomy.

The procedure

An opening wedge high tibial osteotomy is performed through a small incision on the proximal medial tibia and fixed with a plate and screws.

Bernard is placed in a hinged knee brace and stays in hospital overnight. The next day he is mobilised to crutches with gentle touch weight bearing.

Depending on the fixation method used and his weight-bearing progress, he will not need the crutches and brace for more than 6-12 weeks. Return to full duties as a builder is usually at about three months, with return to sport not long after that.

Outcome

Bernard understands that this operation will not be the last operation he has on his knee. The load is now greater on his lateral compartment, which will wear out over time.

Eventually he will need a knee replacement as the arthritis progresses, but hopefully he will get another 10 years from this knee surgery before that happens.

This operation will allow him to stay active as a builder and to continue his occasional running sports. Conversion to a knee replacement yields very good results after an opening wedge high tibial osteotomy.

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