

Case Study

Rugby Player with Osteoarthritis



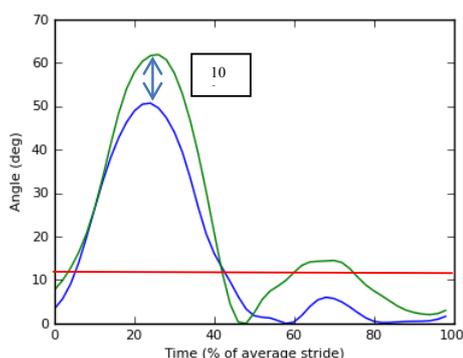
Danny Ward is an English professional rugby league footballer for Harlequins RL in Europe's Super League. His usual position is at Prop-forward. Danny was also a Great Britain international.

Danny was suffering pain during training and when playing. Training was restricted prior to a match.

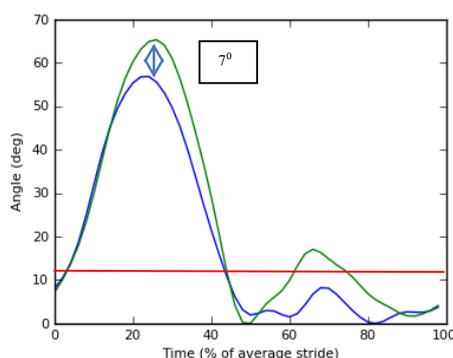
Dannys' gait has been monitored over a couple of months using the GaitSmart system. The gait data retrieved revealed a significant problem with the left knee. This is apparent from the first knee angle plot. The left knee (blue) flexes less than the right knee (green) both in the swing phase (first large peak) and stance phase (second small peak).

On day 0 the difference in the knee flexion in swing was 10° or 18%, which is noticeably outside of the normal range (less than 13%). The knee flexion on stance was also below the 11° value set as the lower limit (the red line). The right knee showed normal functionality.

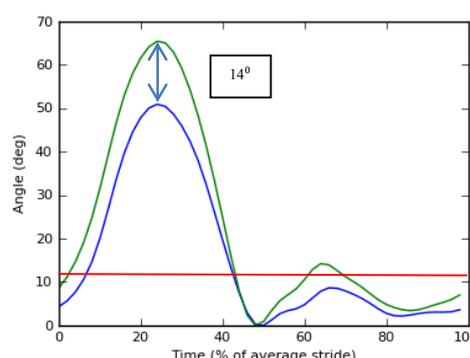
Danny was sent for a medical examination at the London Knee Clinic. The player was diagnosed as having osteoarthritis on the left knee. As Danny wished to continue playing, he was given a hyaluronan injection in the left knee. Two weeks after this injection (middle knee angle plot) the left knee function had improved slightly. In the swing phase the difference reduced to 7° or 12% (within the normal range, but the flexion on stance was still below the acceptable 11° value).



Before treatment



2 weeks after treatment



6 weeks after treatment



Danny was left to continue with physiotherapy and reduced training and playing for a further 4 weeks, bringing him 6 weeks on from his injection. At this stage it was clear that the injection had not made any significant improvement over the pre-treatment condition, in fact it had worsened slightly.

The player and team physiotherapist were therefore in agreement that the player should cease playing and protect their knee by limiting exercise to less strenuous activities.

What are the functional signs of knee osteoarthritis?

One clear indicator of knee osteoarthritis is poor flexion on stance. If the flexion is below 11° there is a potential problem.

A second indicator is poor knee flexion in the swing phase, which becomes more apparent in late stage osteoarthritis. When the osteoarthritis occurs in one knee, then a difference in knee flexion is a prime indicator. A difference of more than 13% is indicative of a problem.

Further secondary indicators are a shorter swing time peak on the affected knee and an unstable profile in stance.

Treatment options for knee osteoarthritis

If the osteoarthritis is at an early stage then a number of options are available:

- Weight reduction where appropriate
- The use of anti-inflammatory drugs /painkillers
- Injections into the knee joint
- Knee braces /supports
- Corrective foot-ware
- Gait training /physiotherapy

If the osteoarthritis is detected later, then surgical intervention is normally required. When the damage is severe a knee replacement is normally advised.