

Case Study

Treatment of knee Osteoarthritis

Patient

This patient had severe lateral compartment osteoarthritis in his right knee and one of his main difficulties was going down stairs.

Gait test

One of the early key indicators of osteoarthritis in the knee is poor flexion in stance. At the later stages the flexion in swing also reduces. These parameters can be determined from a gait test. A gait test was carried out at the initial consultation and then again 6 months after the treatment. From this the knee flexion over a gait cycle (swing and stance phase) was measured for both legs.

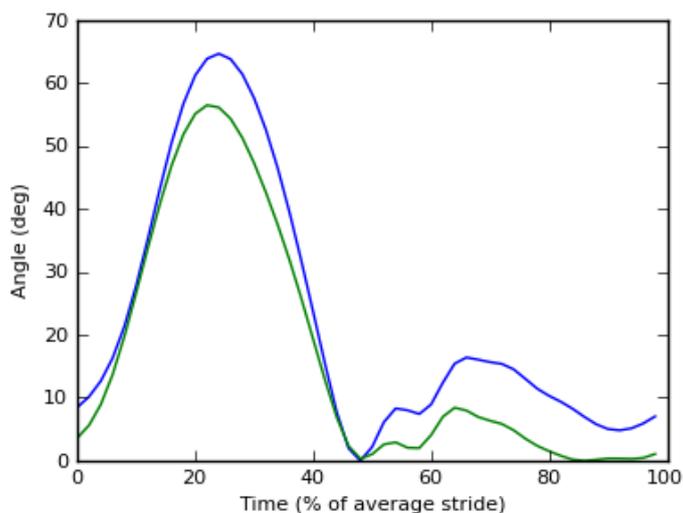


Figure 1, Gait results at Initial Consultation

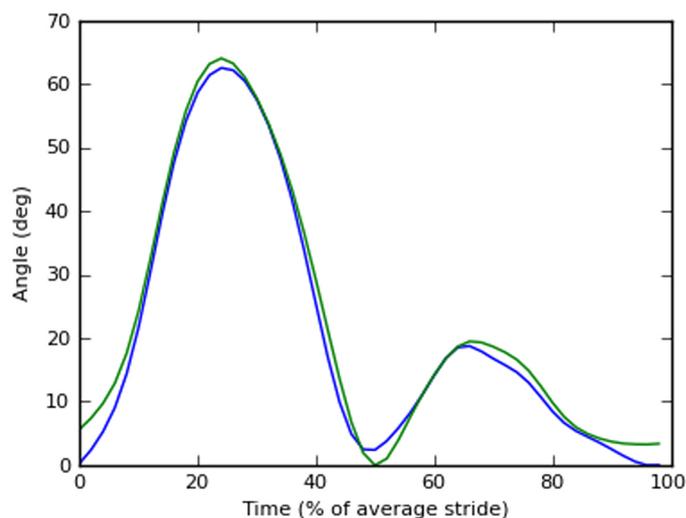


Figure 2, Gait results - typically healthy person

Green line is the right leg knee flexion.

Blue line is the left knee flexion.

The first hump is the knee flexion during the swing phase of the patients gait cycle, there is a difference of 10° between the left and right knee.

The second hump is the stance phase of the patients gait cycle, where there is also a difference of 10° .

Cont.....

Treatment

A distal femoral osteotomy was carried out to re-align the right knee. There were some complications with the recovery after surgery, which led to a slower than normal recovery from the surgery. The patient felt good six months after treatment and had obtained full range of movement on both knees in the static test.

Figure 1 is reproduced again, alongside figure 3 which was the gait test 6 months after treatment.

The key findings are:

- The knee flexion in stance has increased on the right knee, whilst remaining fairly constant on the left knee. This indicates that the treatment for the osteoarthritis has been successful.
- The knee flexion in swing phase on the right knee reduced slightly over the 6 months and the difference between the left and right knee has increased slightly. This indicates that the muscles on the right leg have not fully recovered.

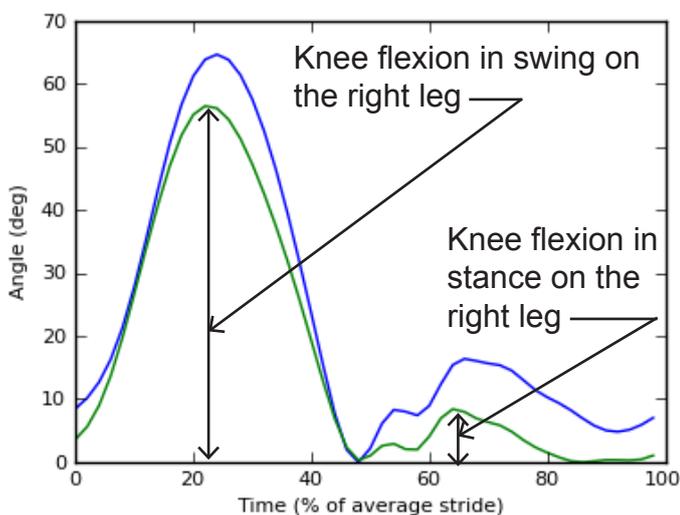


Figure 1, Initial Consultation

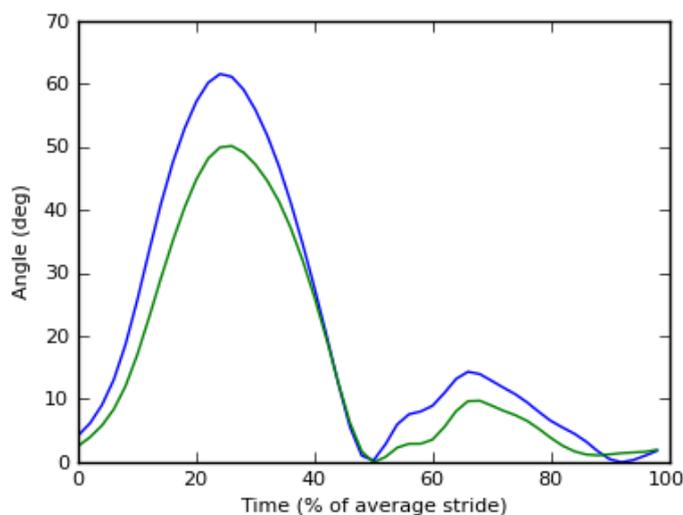


Figure 3, Six months after treatment

Recommendations

The surgical intervention has been successful, however, in the dynamic walking condition his knee flexion on the right leg has reduced and is significantly less than the left. This is considered to be because his hamstring muscle on his right leg needs strengthening. It is recommended that the patient carries out exercises to strengthen the right hamstring and returns for a further gait test after 6 months.