



I HAVE A PATIENT IN HER EARLY 30s WITH A 2 YEAR HISTORY OF CHRONIC KNEE PAIN AND SUBSEQUENT QUADS WASTING. THE PAIN STARTED INSIDIOUSLY AND AN MRI TAKEN 3 MONTHS LATER ONLY SHOWED FAT PAD IMPINGEMENT AND MINOR CHONDRAL FISSURING/SOFTENING.

THIS PATIENT HAS POOR LOWER LIMB BIOMECHANICS (ie. FEMORAL ANTEVERSION, PATELLA ALTA) AND POOR QUADS ACTIVATION/RECRUITMENT PATTERN (ie. 2:1 VL:VMO and delayed VMO activation).

APART FROM CYCLING, WALKING AND GLUT MED STRENGTHENING EX'S IN STANDING (KNEE AGAINST WALL), MOST EXERCISES CAUSE RETRO PATELLA KNEE PAIN, INCLUDING SQUATS>20-30degrees. THE QUADS STILL "SHAKE" WHEN DOING MINI SQUATS DESPITE DOING THE EXERCISE DAILY, AS WELL AS OTHERS FOR 18 MONTHS.

CAN YOU INCREASE QUADS MUSCLE STRENGTH AND SIZE WITH THESE EXERCISES ALONE?

This person sounds like they have a typical patellofemoral joint pain syndrome and as we know, this can be a difficult management problem. The biomechanical issues are feeding into this, and in conjunction with potentially carrying a bit too much weight and a desire to perform running type sport, makes treatment a real challenge.

My approach to this patient is to initially confirm the diagnosis clinically, mainly to asses fat pad impingement from PFJPS, as per the MRI. Hoffa's impingement test may help with this (hyperextension of the knee from a position of 30 degrees flexion)

It sounds like the rehabilitation program has been spot on, with functional VMO/gluteal training program. . There should be no reason that muscle strength and size would not increase with this training regime. In this case the problem will be persistent pain, which is inhibiting VMO activation, and causing a negative feedback cycle – pain causing quadriceps inhibition and this inhibition causing patellofemoral mal-tracking. As such, we need to try and break the pain cycle, or the rehabilitation will continue to be unsuccessful

Initially a trial of simple physical measures may be helpful such as patellofemoral taping to assist in patella tracking, or taping to unload the fat pad. Always consider orthotics if there is significant foot hyperpronation. It is essential that the abnormal biomechanics are addressed early on.

Simple analgesics such as regular paracetamol may be helpful and after this I would consider a 4-6 week course of anti-inflammatories to be appropriate.

If these measures are unhelpful then the management based on this MRI scan may become more interventional. There could well be a role for a cortisone injection, either into the region of the infra-patella fat pad or intra-articularly depending on the clinical assessment. This may be a more direct and localised way of treating the knee pain to allow more effective rehabilitation, and can be quite effective in fat pad impingement.

If the pain is still ongoing then the treatment options become less likely to guarantee success. Consideration needs to be made of surgical referral and possible arthroscopy and fat pad debridement. This may be quite successful if the fat pad is the major contributor to the pain, but much less successful if the pathology is predominantly chondral. Other possibilities to modify the pain in the knee could include a hyaluronic acid injection or a PRPP injection. These are far less scientifically validated in this scenario, but could be suggested as an alternative to surgery.

In summary, the key to treating PFJPS is to strengthen VMO without provoking knee pain, which will inhibit quads activation. Any measure that will improve knee pain to allow effective re-strengthening will be appropriate. Ultimately, however, recalcitrant PFJPS can be quite difficult to manage.

Dr Paul Annett