

Lower Extremity Case

Subjective Information

HPI: A 45 year-old male runner began noticing an ache in the anterior aspect of his right knee (P1) 3 weeks ago after running his usual 15 km. He has continued to run but only shorter distances and would occasionally 'run through' the pain. Now, he notices that P1 can be sharp and occurs earlier in his run. P1 dissipates only after several hours of rest and with brief icing.

On further questioning he reports pain on the dorsal/lateral aspect of his (R) foot (P2) which began one year ago, after he sprained his ankle. Management of the right foot pain was initially managed through the prescription of an orthotic. The patient reports he found the orthotic to be uncomfortable and caused an increase in his pain. He stopped using the orthotic after about 1 month of use.

He also reports occasional right-sided low back pain which only occurs with longer distances (ie: running more than 20 Km). Over the past week, he has noticed more anterior knee pain after prolonged sitting and when descending stairs. Easing factors – rest, ice.

Goal: would like to return to running ASAP.

Objective Assessment:

Observation/Scan:

1. Lower Quadrant Scan – hip, Lumbar spine, SIJ clear, normal SLR (neuro)
2. normal myotomes, dermatomes, deep tendon reflexes
3. Observation in standing – minimal peri-patellar swelling, knees hyperextended bilaterally, flat lumbar spine and buttock region, reduced bilateral med.longitudinal arch (R>L), (R) VMO wasting bilat, patellar position unremarkable, pronated mid-foot bilaterally, right calcaneus position slightly everted. Shoes: heel worn centrally
4. Gait – right medial arch remains pronated throughout gait cycle

A/PROM

5. **Knee A/PROM:** 145 degrees flexion with anterior knee pain at end of range
6. **Foot and Ankle:**
 - a. **SPECIFIC Passive Physiological movements:**
 - i. normal Talocrural joint (TCJ) and Subtalar joint (STJ)
 - ii. restricted mid-foot supination by ¼ range and painful (P2)
7. **Knee combined movements:** unable to do with flexion, extension combined movements normal and painfree
8. **Hip** – normal
9. **Lumbar** – reduced extension PIVM at L4/5 and L5/S1

Passive accessory movement testing

10. **PFJ mobility** – normal glide/tilts all directions
11. **Accessory motion:** reduced plantar glide at **Calcaneocuboid** joint, **Talonavicular** joint normal; Students may or may not choose to assess accessory motions at **TCJ / STJ**: if they decide to test these, all accessory motions at TCJ and STJ are normal

Muscle tests (resisted / length-tension)

12. **RIMs** - strong and painfree all directions at knee and ankle
Static Quads contraction – delayed and reduced (R) VMO recruitment
MMT:
 - (R) **Glute Med** in SL: Gr 4/5, ++ Quadratus Lumborum substitution
 - (R) **Glute Max** in prone: grade 4+/5, compensates with hamstrings ++**Active Straight Leg Raise (ASLR):** positive for poor muscle patterning in lumbo pelvic region (ie: ++ Rectus abdom & Obliques activity)

Special Tests

13. **Special tests:** McMurray's –ve; Apley's –ve, **OBERS** +ve for reduced flexibility (no pain reproduced)
14. **Knee stability tests** – not tested
15. **Palpation:** T.O.P. around borders of med/lat patella
16. **Neurodynamics:** SLR with various biases normal

Functional Tests

17. **Single leg stance:** +ve trendelenberg right leg, difficulty balancing, knee adducts, femur internally rotates
18. **Unipedal ¼ squat (P1 reproduced):** difficulty balancing, as per single leg stance but findings are more exaggerated
19. **Bipedal Squat:** ¾ range (no pain)
20. **Single leg heel raise:** mid-foot does not appear to supinate