

Diagnosis and Treatment P1- Patella Tendinopathy Case Study

Gwen, a 17-year-old girl, presented with an 8-week history of right-sided anterior knee pain following a social summer beach volleyball tournament. At the time of the tournament, Gwen explained that the pain gradually increased, to the point where she was unable to jump using her right thigh muscles. She had to stop and was unable to continue the tournament. Following the tournament, Gwen was advised by her coach to rest her knee and was given some basic quads stretches. When she returned to training, however, the same pain returned. Gwen plays volleyball at state, club, and school level. Gwen reports that she either trains or plays indoors 4-5 times per week, however, since COVID she had to stop all indoor volleyball and the beach volleyball tournament had been the first time she had played over a month.

Pain Presentation

Gwen presented wearing a removable support brace on her right knee which she reported helped with the pain, particularly when descending stairs. Her pain was confined to the patella tendon at the inferior pole of the patella; there was no spreading of her pain and she was able to localise it with two fingers. She reported no sensation changes (no pins and needles or numbness). Gwen also reported occasional pain in her lumbar region which occasionally radiated into her right glutes, which was usually eased by Pilates. However, since COVID she has been studying from home and had to cease Pilates, and because of this reported her low back/ gluteal pain was more frequent.

Behaviour of Symptoms

Gwen described her pain as 'agony' after playing one game of volleyball. Her pain was worse, depending on the number of spikes she performs during the game and at times she would have to stop. After 15 spikes the pain was unbearable, she rated it 8/10 on the VAS scale and it would usually take until the following day for the pain to settle back down to a manageable 5/10. She was also unable to train at the same intensity and would regularly have to sit jumping drills out.

Gwen's morning pain and stiffness was moderate; she reported hobbling to the bathroom but by the time she had finished her shower, her knee had loosened up. Her knee was particularly sore if she had played volleyball the night before, and it would take approximately 30 minutes for the pain to settle. Rest eased her pain temporarily, however, it reoccurred once she returned to activity.

Client Perspective

Gwen was fearful of pain and reported that she had started to avoid certain activities including stairs and jumping. She did not believe that she was ever going to get better and was concerned that her only option was surgery. She reported that her right knee felt weak and she was worried that if she continued to jump her tendon would snap and cause permanent damage.

Q1. Perform diagnostic tests to confirm your diagnosis of patella tendinopathy and any other tests that you would want to perform to exclude other potential sources of Gwen's pain?

- **Palpation:** client supine and the knee extended. Palpation was performed gently at the attachment site of the patella tendon, over the inferior pole of the patella, along its whole length from proximal to distal.
- **London Hospital test:** Once local tenderness had been elicited when the tendon is palpated in a relaxed position with the knee extended. The tender portion of the tendon was then palpated again with the knee flexed to 90 degrees. The test is considered positive if the pain was markedly reduced or absent in knee flexion. If Greater pain is noted when the knee is in 90 degrees flexion and the tendon is stretched, then the likely source of symptoms maybe peritendon or fat pad.
- **Hoffa's test:** palpation either side of the patella tendon with the knee in full extension should be painful. Pain is then reduced when the knee is palpated in between 30-60 deg knee flexion
- **PFJ tests**

Q2. Discuss and perform within your group a progression of load tolerance tests that you would use to quantify Gwen's objective load tolerance? (6 points)

Isometric, concentric, eccentric phase?

Single leg decline squat

- Angles between 15 °-30° maximally load the patella tendon
- Knee flexion angle > 60 ° should be avoided because they maximally load the PFJ
- If higher tendon load is required, then add an external weight.

Load tolerance progressions

1. DL decline squat (< 60 ° knee flexion angle)
2. SL decline squat (< 60 ° knee flexion angle)
3. DL vertical jump
4. SL vertical hop
5. Maximal forward hop

Q3. List the key features of patella tendinopathy reported in this case study (4 points)?

Q4. What would you consider Gwen's client reported load tolerance to be and how would this inform your physical assessment? (3 points)

Q5. Please discuss any 'contributing factors' (both intrinsic and extrinsic) to the development of Gwen's problem and to her ongoing pain and disability? (3 points)

Extrinsic:

Intrinsic:

Q6. What is your interpretation of Gwen's 'perspectives on her experience' (E.g her understanding of her condition, fears, stress, coping, etc.)? How would you address these in your management? (10 points)

Unhelpful beliefs:

Education should focus on: