

DIFFERENTIAL DIAGNOSIS OF MUSCULOSKELETAL PAIN

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I have been lecturing in the field of Sports Medicine for eight years and during this time have come to recognise that many Sports Therapists treat where the patient presents with 'pain' rather than considering if this is the actual 'cause' of the problem or if it is merely a 'symptom'.



The potential for referral of pain from systemic disease to specific muscles and joints is well documented in medical literature. These referral patterns most often affect the back and shoulder but may also appear in the chest, thorax, hip, groin or sacroiliac joint.



It is essential that therapists take a client history and correlate their subjective and objective findings in order to recognise presenting conditions that require medical referral. The therapist should conduct a systems review, and be familiar with different types of pain, specific pain patterns, and signs and symptoms that may suggest systemic origins of problems appearing in the musculoskeletal system.



The following three case studies are of actual clients that have attended my clinic. The reader is encouraged to consider some of the 'key' factors for each patient. There are clues as to what is going on in both the subjective history and medical history (see section 1 of the case studies). Consider what you feel is the likely cause of the client's pain before you then go on to review some hypotheses proposed by Delegates attending an FHT Sports Conference (section 2) and my own personal hypothesis of the complaint (section 3).

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Case Study One

1

A 49 year old male presents with pain to the left axilla and radiating into the left anterior chest. The onset was six weeks ago with no obvious cause. The pain is worse at night and the patient finds it difficult to adopt a position that eases the pain. He has reduced his gym activity because he considers exercising to be exacerbating his axillary pain. Active range of motion (ROM) of his shoulder joint and cervical spine causes no pain or signs of being restricted.

Medical History:

The patient has had a cardiac examination including an ECG and this was all clear. There is a history of a hiatus hernia about a year ago for which he is on medication.

2

- * Rotator cuff strain?
- * Cervical referred pain?
- * Serratus anterior strain?
- * Frozen shoulder (Adhesive capsulitis)?
- * Lungs, ribs, intercostals?
- * Lymphatic node enlargement?

3

Before I discuss my own hypothesis it is first necessary to support or reject the Delegates' hypotheses listed above (2). Taking into consideration the client's history it is worth noting that his shoulder and cervical spine has no restrictions and does not refer pain or exacerbate his symptoms. There is no history of trauma or overuse so you can rule out muscular causes. Inhalation, coughing and sneezing has no effect on his pain so again this will rule out the lungs, and ribs, etc. There was no apparent swelling in the axilla or infections so we can safely rule out an inflamed lymph node. The give away in the client's history is that he experiences pain at night and cannot find a position that would ease his symptoms. This is generally what would be known as a 'red flag' and requires further investigation, as it can indicate some form of carcinoma. This

client however had no other symptoms and was otherwise perfectly healthy so I did not consider a referral necessary at this stage. My hypothesis for the diagnosis was that the hiatus hernia was the cause of his night pain as this was referring into his mid-thoracic spine via the sympathetic nervous system and causing the vertebral segment to become 'facilitated' which then caused the thoracic vertebra to refer to his axilla. This is known as a visceral-somatic dysfunction. The patient responded successfully to Osteopathic treatment of his thoracic spine.

Case Study Two

1

A 60 year old slim looking male presents to the clinic with generalised 'sciatic' sort of symptoms with pain originating in his right calf and progressing up the leg and into the lower right side of his back. It has progressively got worse over the last two years with the pain in his leg/back only being exacerbated by walking for 200 -300m, at which point he has to stop due to the pain (mainly in his calf).

Medical History:

This patient has been smoking about 60 cigarettes a day for the last 40 years. His blood pressure on testing was 180/120. His right leg in particular appeared hairless and cold with a reduction to his distal pulses.

2

- * Discogenic referring from L5 / S1?
- * Piriformis syndrome?
- * Sciatica?
- * Deep vein thrombosis?

3

Again, let's consider the Delegates' hypotheses. The patient denies any specific back or gluteal pain, and there is no history of any bending/ twisting motions that might aggravate the lumbar spine. As there is no apparent swelling/ heat in his calf, we can also rule out a thrombosis. My hypothesis for this diagnosis is that pain only comes on (initially) in his calf after walking 200m, which indicates that the demand for oxygen in his leg muscles has to increase. But there seems to be some difficulty in achieving this, resulting in an ischaemic response and induction of pain. The abdominal aorta splits into the iliac artery before becoming the femoral artery which passes into the leg through the femoral triangle. I considered that he had an occlusion in the iliac artery that restricted the amount of blood going to his periphery. The condition is known as intermittent claudication, also referred to medically as peripheral vascular disease (PVD). It is mainly caused by thickening of the arteries (Arteriosclerosis). This patient was recommended to visit his GP where he was referred to a specialist who did an Arteriography and diagnosed an occlusion in his right iliac artery, which resulted in surgical intervention. The patient has since given up smoking and his blood pressure is continually being monitored.

Case Study Three

1

A therapist referred a 72 year old male client to visit the clinic. The therapist asked if I could manipulate the client's left sacroiliac joint (SIJ) as he felt it was restricted. The client initially went to see his GP with left sided lower back pain and groin pain and his GP identified that his left SIJ was referring pain into his left groin and that he should therefore consult a relevant physical therapist. After taking a full client history, I concluded that the groin pain had been present for the last year and it was only in the last two weeks that his back pain had presented.

Medical History:

On examination, the 'FABERS' test (Flexion, Abduction, External Rotation) was positive for the left hip, passive internal rotation of his hip joint was restricted compared to the right side, and a 'capsular pattern' was present. Both of these tests increased the client's symptoms to his groin. I later told the patient what I considered to be the cause of his pain and the reasons why.

2

- * Lumbar spine referring to groin?
- * SIJ referring to groin?
- * Muscular strain of adductors / psoas?
- * Hip joint capsule?

3

As in the previous case studies, consider the rationale of the Delegates' hypotheses. If one is specific with subjective history taking then one would notice that the patient has had the groin pain for a while, but that the onset of his back pain has been recent. There is no doubt that the SIJ/ Lumbar can refer to the groin but it seems inappropriate that this is the case in this situation. There is no history of trauma so a muscular strain/ herniation is unlikely. Given the age of the patient and my clinical findings, I considered this patient to have osteoarthritic changes to his hip joint which would result in a gradual loss of hip joint motion and subsequently the pelvis would try to compensate and hence had become inflamed. If treatment was to focus on his sacroiliac joint, then I personally feel that I would have exacerbated the existing complaint. This patient was referred back to his GP where he had an X-ray of his hip joint which confirmed the diagnosis of osteoarthritis and the treatment paradigm was reviewed accordingly.

Conclusion

I feel that one of the most important aspects of any physical therapy is to ensure a full client history is taken, as a lot of information can be gathered from this and a potential hypothesis formed. The situation is initially analogous to a 1000 word jigsaw puzzle and as you progress through the subjective history the picture starts to take shape and this should then become clearer as you support or reject the hypothesis of the diagnosis during the objective examination. Remember it is the health and well-being of our clients that is our priority, so if we are unsure about something no matter how trivial we should have the professionalism to refer.

In [Part 2](#), John will be focussing on pelvic instability