Orthopaedic Division
CANADIAN PHYSIOTHERAPY ASSOCIATION
Division d'orthopédie
ASSOCIATION CANADIENNE DE PHYSIOTHÉRAPIE

Level 4, 5 & Advanced Exam
Case History Exam
Subjective Booklet

Questions to be completed following the ***Subjective*** Examination

Candidate Number:_____

Candidate Name:_____

Exam Date:_____

1. Describe the different mechanisms that may be influencing this patient's pain. Based on the information provided in the subjective examination, list the evidence, if any, that would be most indicative of the categories of influences on the patient's pain presentation. In formulating your answer, consider all 3 pain areas. (5 marks)

Nociceptive mechanical:

P1 – location localized near trauma area of wrist; described as sharp. P1 intermittent; ↑'d with twisting movements such as brushing hair and weight bearing such as cutting with a knife; ↓'d with rest, support, heat;

P2 – localized area to anterolateral shoulder; described as dull, achy, sharp with movement. P2 intermittent; ↑'d with overhead movements and dressing; ↓'d with rest;

P3 – localized area to left side of neck; described as dull and achy. P3 - ↑'d with turning head to left.

Nociceptive inflammatory:

P3 constant; morning stiffness; +ve response to Ibuprofen; better with changing positions.

Peripheral neuropathic:

There is no evidence of peripheral neuropathic. P1 is not a peripheral neuropathic pain and P2/P3 are unlikely.

Central mechanisms:

There is potential for central mechanisms because of the risk factors listed below but at this point, there are no symptoms at present to support this.

P1, P2, P3

5 years of neck pain so may have some central sensitization; stress of recent (6 months) loss of husband and suing hospital; worried about not regaining function and long-term pain.

2 (a). List 3 of the <u>most likely</u> structures at fault for each area of symptoms. (4.5 marks)

P1:
1. *Distal ulna*

2. *TFCC*

3. *FCU*

P2:
1. *any of the rotator cuff tendons, biceps, rotator cuff interval*
2. *glenohumeral (GH) joint capsule, acromioclavicular (AC) joint, sub acromial bursa, humeral head, glenoid, labrum*
3. *C4/C5 segment referral*

P3:
1. *paraspinal muscles e.g. upper fibres trapezius (UFT), levator scapulae, splenius capitus or cervicis*

2. *O/A, A/A, C2/C3, C3/C4, C5/C6, C6/C7 facet joints; (Combination of any)*

3. *C4-C7 discs, dural referral*

2 (b). For P1, explain your rationale for each of the three structures you have chosen based on the <u>subjective data</u> that has been provided. (3 marks)

P1:

Structure 1 – *distal ulna*

Rationale –

Location of pain is ulnar, MOI was a trauma (bone could be contused, subchondral fracture), pain with weight bearing, post reduction of the distal radius fracture could have led to a decrease in height of radius leading to an ulnar variance (common cause of ulnar pain post Colles fracture)

Structure 2 – *TFCC, distal radio-ulnar joint capsule; radio-carpal joint capsule, ulnomeniscocarpal joint, ulnar collateral ligament, lunotriquetral interosseous ligament, 4th and 5th CMC, pisotriquetral joint, triquetral hamate joint, palmar and dorsal radioulnar ligaments*

Rationale – *Location of pain is ulnar, MOI was a trauma (soft tissues could have been sprained); pain with twisting movements, difficulty with weight-bearing – getting out of a chair or pushing a door open*

Structure 3 – *FCU, ECU, ulnar nerve*

Rationale - *Location of pain is ulnar, anatomical relationship with the TFCC*

3a. Choose one level of irritability (mild, moderate, severe) that best describes the irritability of the most severe area of P1, P2, or P3. (2.5 marks)

Mild **Moderate** **Severe**

3b. Justify your answer with 4 pieces of evidence from the subjective examination.

1. *It doesn't take much (twisting arm to brush hair, cutting, overhead lift, turning head to left) to bring on P1, P2, or P3*
2. *Can get dressed and lift arm up, it just ↑'s the pain*
3. *The pain can be as high as 7/10 which is severe but settles to 2/10 in 3 hours*
4. *It settles easily with rest and support in just a few hours to 2/10 (mild)*

3c. What are the implications of this for the physical examination? (1.5 mark)

Not all tests (avoid aggressive, provocative tests) will need to be performed. Supination should be performed last, as well as overhead movements of the shoulder, and left rotation of the cervical spine as patient stated these will provoke pain. Be gentle to avoid creating 7/10 pain.

Specific testing of the wrist with loading, neurodynamic testing, resisted testing performed cautiously.

4. Are there any subjective examination findings that would indicate caution must be observed during the objective examination; if yes, list no more than 2 and in either case justify your answer? (2 marks)

1. She is suing the hospital so be cautious to not make her much worse during the objective exam
2. Possible fractures in other areas (shoulder) that haven't been imaged

Other potential responses:
3. Pain could spike as high as 7/10, caution with sequencing of your objective examination
4. Mental health status questionable after loss of husband 6 months ago
5. Risk factors for osteoporosis and no bone density studies

5. Write two subjective questions you would like to have added to this case to help rule in or out any possible psychosocial (yellow), occupational (blue/black) and/or prognostic (pink) flags. Provide your justification for why you are asking these questions. (2 marks)

1. *How are you coping with the death of your husband? Poor coping may affect her response to pain and her rehabilitation. Might require a referral to a psychologist.*
2. *What duties is your helper doing and why (cleaning, cooking)? This gives the PT further insight into current barrier to her full recovery. PT may be able to utilize this information to gradually allow her to assume tasks as her recovery improves.*
3. *What are your goals and expectations for physiotherapy? This allows the PT the ability to align the client's goals with theirs.*
4. *Why do you think that your wrist has not responded to the treatment? This question will aid in determining if there are potentially other barriers to her recovery i.e. fear avoidance.*
5. *What have been your coping strategies over the last few months with your wrist, shoulder and neck pain? This will allow the PT to better develop a therapeutic alliance with her client. They can discuss pros and cons of her current strategies and build on new strategies from there.*

6. After reading the subjective data, list the 2 (most likely) clinical hypotheses and provide 3 subjective findings to support each hypothesis. (5 marks)

HYPOTHESIS 1: P1 = palmarly fixated triquetrum when she fractured her radius (location of pain and MOI and P1 provoked with movement/twisting); P2 = compressed sub-acromial space with involvement of both supraspinatus and long head of biceps tendons from fall at time of fracture (location, MOI, pain with overhead activities); P3 = hypertonic paraspinal muscles such as levator scapulae and UFT from guarding the left upper extremity - location of pain, turning head to left, increased at computer (postural element).

HYPOTHESIS 2: P1 is a TFCC injury/instability (ulnar) due to the MOI and stiffness at the radiocarpal joint with compensatory hypermobility at the ulnar side of the wrist (location of pain and MOI and P1 provoked with movement/twisting); P2 is a labral tear of the left GH joint (location, MOI, pain with overhead activities); P3 = OA cervical spine ~C4/5/6 (age, location of pain and pattern through the day).

7. Based on the subjective examination you have developed two clinical hypotheses (H1, H2). In planning your physical examination, provide only the most relevant (at least 6 and no more than 8) tests that you would use to support or negate your hypotheses. Include your rationale for choosing each test and the expected findings. (9 marks)

Test 1: ***Cervical spine mobility testing (AROM, PPIVMs, PAIVMs, and combined movements)***

Rationale for choosing test 1: *AROM - Part of scan, does cervical movement increase/relieve P3, P2, or P1*

Expected findings for test 1 for H1:

If hypertonic levator scapulae/UFT the following active or passive combined movements could have restricted ROM and/or provoke P3: levator scapulae = flexion/right side bend/right rotation; UFT = flexion/right side bend/left rotation. Endfeel (EF) would be muscular and quality of P3 would be discomfort due to a strong stretching sensation.

If muscular cause, PAIVMs will not be significantly restricted when compared bilaterally and not pain provocative.

Expected findings for test 1 for H2:

If C-spine OA ~C4/5 the following active or passive combined movements could have restricted ROM and/or provoke P3:

Positive extension quadrant with left side flexion, left rotation with reproduction of P3 – the components of this quadrant might also be restricted and painful but combined will be the most obvious

PPIVMs:

C4/C5 – decreased flexion/right side flexion/right rotation – capsular end feel (stretch)

C4/C5 - decreased extension/left side flexion/left rotation – reproducing pain (compression)

PAIVMs:

decreased superoanteriorlateral glide C4 on C5 – capsular end feel

decreased inferomedialposterior glide with early capsular end feel and reproduction of pain

Could also include decreased inferomedialposterior glide U joint

Test 2: Wrist mobility testing (AROM, PROM, PAMs)

Rationale for choosing test 2: *To differentiate between a fixated triquetrum and a TFCC injury/instability*

Expected findings for test 2 for H1:

If palmarly fixated triquetrum, the following AROM and PROM may be reduced and pain provocative for P1: wrist extension with capsular EF; wrist flexion with harder, blocked EF; radial deviation with capsular EF; ulnar deviation with hard, blocked EF. Dorsal glide of triquetrum would be restricted with an abrupt, blocked EF

Expected findings for test 2 for H2:

If TFCC injury/instability the following AROM and PROM may be reduced and pain provocative for P1: supination/pronation possibly with a spasm EF; extension and flexion could be affected; ulnar deviation would be painful. PAMs at the inferior radio-ulnar joint may have an increased neutral zone, late/boggy EF or spasm EF or click

Test 3: Wrist Special tests/functional tests (Grind test, Grit test, supination lift off test, push off or press test, and compression/distraction)

Rationale for choosing test 3: *Patient complained of pain with weight bearing*

If suspect injury to the TFCC complex

Expected findings for test 3 for H1:*All of these special tests with the exception of the Grit test may provoke familiar pain in the presence of a palmar fixation of the triquetrum. Pain reported would be minimal.*

Expected findings for test 3 for H2:

Grind Test *– click, crepitus, subjective complaints of ulnar pain*

Grit Test *– ratio of grip strength in supination/pronation GRIT ratio is greater than 1.0 with ulnar impaction syndrome (UIS)*

Supination lift off test *– pain is reproduced when the patient attempts to lift the examination table with the palm flat on the underside of the table*

Push off or Press test *– patient has to lift himself out of a chair, with the wrists in extension – reproduces the pain*

Increased pain with compression + movement; decreased pain with distraction + movement

Test 4: Wrist stability /ligament testing (piano-key test, dorsal and palmar radioulnar ligaments, and lunotriquetral ballotement test. Could also include: specific ligament stress tests, shear test, and lunotriquetral interval tenderness).

Rationale for choosing test 4:

MOI – patient may have sustained a ligamentous injury and could have a stability issue on ulnar side of the wrist

Expected findings for test 4 for H1:

Stability and ligament testing would be negative in the presence of a fixation.

Expected findings for test 4 for H2:

piano-key test *– laxity – more than 5 mm difference compared to asymptomatic side*

luno-triquetral ballotement test *– translating the lunate in an anterior/posterior direction while stabilizing the triquetrum – pain, laxity, crepitus*

Test 5: Glenohumeral mobility testing (AROM, PROM, PPM, PAM, capsular length)

Rationale for choosing test 5: *P2 is in the GH area so need to see the effect of movement*

If impingement, could have tight anterior-superior capsule – may be a contributing factor

Expected findings for test 5 for H1:

If the rotator cuff interval is affected, anticipate loss of both active and passive range of motion. Expect loss of ER in adduction compared to adduction in 90 degrees of abduction with anterior-superior capsular restriction.

Expected findings for test 5 for H2:

If articular structures the cause, AROM, PROM will be reduced in the same directions. PPM and PAM restricted if articular. Minimal loss of range if labral involvement.

Test 6: GH resisted tests

Rationale for choosing test 6:

Testing for function of supraspinatus *and biceps tendons which may have been impinged in the subacromial space*

Expected findings for test 6 for H1:

If sub acromial impingement of supraspinatus and long head biceps could have weakness and/or P2 reproduced with resisted forward flexion, abduction, and external rotation.

Expected findings for test 6 for H2:

If labral tear, weakness and/or P2 might be reproduced with forward flexion

Test 7: Shoulder special tests:

Impingement (Hawkins Kennedy, Neer's), Rotator cuff (empty can, full can), Labral tests – (O'Brien's, anterior slide, crank, biceps load I/II, compression rotation), Scapular and humeral head repositioning tests

Rationale for choosing test 7: *Test for impingement and scapular control*

Expected findings for test 7 for H1:

If subacromial impingement, positive impingement and scapular control tests

Expected findings for test 7 for H2:

If labral pathology, expect positive findings on labral special tests as listed above.