

SHOULDER CASE SCENARIO

History and Interview

A 45-year-old female arrives to your physical therapy clinic with complaints of left shoulder pain that began about 1 month ago and has been progressively worsening. She is unsure what caused the symptoms but recalls a minor fall off her bike around the time of onset. When asked to point to the location of symptoms, patient grabs her shoulder and deltoid region. At rest, she notes her shoulder feels sore and stiff (2/10 on the Numeric Pain Rating Scale [NPRS]), but symptoms can be sharp with certain movements, such as reaching out to the side or behind the back (7-8/10 NPRS). If she does not do those movements, symptoms are “not bad.” She usually sleeps on her side but has been unable to get comfortable.

1. The physical therapist asks the patient questions regarding her prior medical history. Which of the following should be of particular concern?
 - a. Appendicitis.
 - b. Hypertension.
 - c. Liver disease.
 - d. Thyroid disease.

The correct answer is **d. Thyroid disease**. Patient’s demographics place her at risk of adhesive capsulitis (age, gender); presence of thyroid disease would increase her level of risk. Appendicitis and liver disease can cause referred pain to right shoulder (patient’s complaint is left shoulder pain). Hypertension typically does not cause referred shoulder pain.

Systems Review

The physical therapist determined that clinical evaluation should be focused on the musculoskeletal system, with an emphasis on the shoulder region. Other screening examination components were not deemed necessary due to minimal complaints in other body regions and no reports of symptoms or functional imitations that were inconsistent with musculoskeletal involvement.

Tests and Measures

Evaluation of the left glenohumeral joint revealed active range of motion (ROM) measurements of full flexion with pain at end range, full abduction with painful arc, 75° external rotation in neutral with pain at end range, 75° external rotation at 90° abduction limited by pain, and internal rotation behind the back to L3 limited by pain. Passive ROM revealed full flexion with pain at end range, full abduction with pain at end range, 75° external rotation in neutral with pain at end range, 90° external rotation at 90° abduction with pain at end range, and 50° internal rotation at 90° abduction limited by pain. Joint mobility of the glenohumeral joint was hypomobile posteriorly and inferiorly. Manual muscle testing (MMT) was strong and painful in all planes and handheld dynamometry revealed a 10% asymmetry in external rotation strength in neutral and 90 degrees of abduction. MMT of middle and lower trapezius was 4-/5 and 3+/5 respectively and weaker than the unaffected side. Hawkins-Kennedy, Neer’s, empty can, and O’Brien’s tests were positive. Speed’s test was negative.

2. Which of the following is the patient's most likely diagnosis?
- Adhesive capsulitis.
 - Biceps tendinopathy.
 - Rotator cuff tear.
 - Rotator cuff tendinopathy.

The correct answer is **d. Rotator cuff tendinopathy**. Location and aggravating maneuvers are consistent with this diagnosis. Additionally, the patient presents with positive subacromial impingement cluster (painful arc, pain with resisted external rotation, positive Neer and Hawkins-Kennedy tests), rotator cuff tendinopathy findings (painful arc and positive Hawkins-Kennedy test) and reports reproduction of symptoms with active and resisted movements. Adhesive capsulitis is unlikely due to no loss of passive ROM. Biceps tendinopathy less likely due to negative Speed's test (positive O'Brien's may be due to positioning). Rotator cuff tear is unlikely as patient's rotator cuff manual muscle tests were strong and painful.

Prognosis and Plan of Care

Clinical examination and additional historical information confirmed the diagnosis of subacromial pain syndrome, and the patient is deemed appropriate for treatment with physical therapy interventions. Initial home program was provided based upon impairments observed during examination. The patient was instructed to perform the exercises 1x/day as tolerated for 1 week, before following up in clinic. After first follow-up, the patient was recommended to participate in physical therapy once weekly for 8 weeks, depending on progress.

Intervention

The patient's initial home exercise program emphasized pain-free active-assisted ROM and resistance training exercises. Patient education was provided for temporary avoidance of painful maneuvers and optimal sleep position.

3. Which type of resistance training exercises would be most appropriate for this patient?
- Closed kinetic chain.
 - Eccentrics.
 - Isometrics.
 - Multiplanar.

The correct answer is **c. Isometrics**. Patient's diagnosis of rotator cuff tendinopathy and examination notable for strong but painful rotator cuff contraction indicates isometric rotator cuff exercises for pain modulation. Irritability is too high for eccentrics and multiplanar exercises. Closed kinetic chain may be too challenging at this time due to periscapular weakness.

Outcomes

The patient returned to the physical therapy clinic after 3 sessions of physical therapy over a 3-week period. She regularly performed the prescribed home exercise program and was compliant with all

activity modification recommendations. She reports increased pain and stiffness with activities of daily living. You reassess the patient and observe a 10° to 15° loss of passive ROM in all planes.

4. Based on the updated findings, which of the following conditions would be most likely?
 - a. Adhesive capsulitis.
 - b. Glenohumeral osteoarthritis.
 - c. Rotator cuff tear.
 - d. Subacromial impingement.

The correct answer is **a. Adhesive capsulitis**. Progressive loss of passive ROM is concerning for early-stage adhesive capsulitis. Osteoarthritis could cause passive ROM loss but is less likely due to the patient's age, and global motion restrictions would not arise so rapidly. The patient's active ROM and strength have not decreased, making a cuff tear less likely. Impingement would cause increased aggravation at end ranges of motion but is unlikely to cause multidirectional passive ROM loss.

5. How will you modify your plan of care to accommodate for the patient's change in symptoms?
 - a. Continue with the current treatment plan.
 - b. Focus on regaining pain-free range of motion.
 - c. Perform grade III/IV glenohumeral joint mobilizations.
 - d. Progress strengthening exercises to eccentrics.

The correct answer is **b. Focus on regaining pain-free range of motion**. Other options are not appropriate for patient's change in status and level of irritability.

6. If the patient's pain reports increase and passive range of motion continues to decrease, how should you proceed?
 - a. Consider visceral cause for symptoms.
 - b. Continue with current treatment plan.
 - c. Referral to medical doctor for imaging.
 - d. Referral to medical doctor for potential corticosteroid injection.

The correct answer is **d. Referral to medical doctor for potential corticosteroid injection**. Acute cases of adhesive capsulitis should be treated with corticosteroid injection, with optimal results within the first 6- to 2 weeks of symptom onset.

REFERENCES

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