

Session 5 Symposium: Physical exam of shoulder disorder - No. 3

SLAP Lesion의 이학적 검사

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Basic Principles

- A. History taking: age, trauma, occupation, sports activity
- B. Past medical history: DM, injection, operation
- C. Compare both sides
- D. Symptom
 - 1) posterior pain at late cocking phase-vague, inconsistent
 - 2) mechanical symptom: catching, locking, popping, grinding-“deadarm”

The Basic Examination

A. Inspection

- 1. Winging
- 2. Shrugging
- 3. Muscle atrophy
- 4. Spine

B. Palpation

- 1. Biceps tenderness
- 2. AC joint

C. Range of motion

Active and passive ROM

- 1. Forward flexion
- 2. Abduction
- 3. External rotation at abduction
- 4. Internal rotation at abduction

GIRD (Glenohumeral Internal Rotation Deficit)

5. External rotation at side
6. Internal rotation at position

D. Biceps tests

1. Speed' s test

- Maneuver: arm flexed 90 degrees and 10 degrees horizontal abduction, then resisted elevation
- Positive test: pain during forward elevation
- Interpretation: Biceps long head problem (tendonitis, subacromial impingement, SLAP)

2. Yergason' s test

- Position: sitting with elbow 90' flexion
- Maneuver: resisted supination of elbow
- Positive test: pain localized on the bicipital groove
- Interpretation: biceps tendon problem

3. Biceps instability test

- Maneuver: palpation of biceps groove while the arm position of AbER to AbIR
- Positive test: painful click on the bicipital groove
- Interpretation: biceps tendon subluxation or dislocation

4. Popeye deformity

E. Biceps tests

1. Compression-rotation test

- Position: supine
- Maneuver: arm abducted 90 degrees and grind to capture labral fragment (McMurray of the shoulder)
- Positive test: pain or click
- Interpretation: sensitive for labral tear, not specific for SLAP lesion

2. Crank test

- Position: supine or standing
- Maneuver: arm elevation 160' in scapular plane, humerus loaded axially with maximum IR&ER

- Positive test: pain with/without click
- Interpretation: glenoid labral tear, not specific for SLAP lesion

3. Anterior slide test (Kiebler test)

- Position: standing
- Maneuver: hand on hip, axial load along arm to create shear
- Positive test: should produce click or pain
- Interpretation: SLAP

4. Active compression test (Flexion-adduction test, O'Brien test)

- Position: standing
- Maneuver: arm forward elevation 90° with elbow extension, arm adducted 10~15°, maximum IR (thumb down), examiner applies resisted downward force to arm, patient then maximally supinate arm and the maneuver is repeated
- Positive test: pain or click, pain should decrease with palm-up
- Interpretation: SLAP lesion, AC arthritis

5. Pain provocation test or Mimon's test

- Position: Sitting
- Maneuver: arm abducted approximately 90° to 100°, examiner externally rotates shoulder and puts forearm in maximum pronation and then maximum supination
- Positive test: pain provoked only when forearm is in pronated position
pain in pronation > pain in supination
- Interpretation: superior labral tear

6. Biceps Load test

- Position: supine
- Maneuver: Arm abducted 90°, externally rotated, with the elbow flexed 90°, and the forearm supinated. Apprehension test is performed. Apprehension appears, and then performs resisted elbow flexion.
- Positive test: The apprehension remains the same or the shoulder becomes more painful
- Interpretation: superior glenoid labrum integrity in shoulder with recurrent anterior dislocation

7. Biceps Load test II

- Position: Supine
- Maneuver: arm elevated 120°, maximum external rotation, elbow flexed 90°, forearm

supinated, resisted elbow flexion

- Positive test: pain during resisted elbow flexion
- Negative test: no pain or pain unchanged or less by resisted elbow flexion
- Interpretation: SLAP lesions specifically

8. Whipple test

F. Internal impingement test

1. Apprehension & Relocation test

Position: supine

Maneuver:

- Apprehension: arm abducted and externally rotated until pain or instability
- Relocation: push posterior on humeral head

Positive test: disappear pain or instability

Interpretation:

- A) Pain goes away: internal impingement
- B) Sense of instability goes away: instability

G. AC joint examinations test

1. Direct tenderness
2. Active compression test
3. Cross body adduction test
4. Lidocaine injection test

REFERENCES

1. Yergason, R.: Supination sign. J Bone Joint Surg, 1931. 13:160.
2. Ludington, N.: Rupture of the long head of biceps flexor cubiti muscle. Ann. Surg., 1923.77:358-363.
3. Abbott, L.: Saunders LB de CM, Acute traumatic dislocation of the tendon of the long head of biceps brachii; report of 6 cases with operative findings. Surgery, 1939.6:817-840.
4. Snyder et al.: SLAP lesions of the shoulder. Arthroscopy, 1990.6(4):274-9.
5. Liu, S.H., M.H. Henry, and S.L. Nuccion: A prospective evaluation of a new physical examination in predicting glenoid labral tears. Am J Sports Med, 1996.24(6):721-5.
6. O' Brien, S.J., et al.: The active compression test: a new and effective test for diagnosing labral tears and acromioclavicular joint abnormality. Am J Sports Med, 1998. 26(5):610-3.
7. Kibler, W.B.: Specificity and sensitivity of the anterior slide test in throwing athletes with superior glenoid labral tears. Arthroscopy, 1995. 11(3): 296-300.
8. Kim, S.H., K.I. Ha, and K.Y. Han: Biceps load test: a clinical test for superior labrum anterior and

- posterior lesions in shoulders with recurrent anterior dislocations.? Am J Sports Med, 1999. 27(3):.300-3.
9. Kim,S.H., et al.: Biceps load test Ⅱ : A clinical test for SLAP lesions of the shoulder. Arthroscopy, 2001. 17(2):160-4.
 10. Mimori, K.,et al.: A new pain provocation test for superior labral tears of the shoulder. Am J Sports Med, 1999. 27(2):137-42.