CLINICAL EXAM OF THE SCAPULA
RATIONALE AND TECHNIQUES

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SCAPULAR DYSKINESIS

ALTERATION (DYS)- POSITION, MOTION (KINESIS)

Scapular dyskinesis

• Commonly (67- 100%) seen in association with all types of shoulder pathology
• Impairment of normal SHR
• When found associated with sx, should be addressed

Scapular dyskinesis

• Alteration in static position, dynamic motion
• Multiple causative factors
• Results- scapular anterior tilt, internal rotation, lack of upward rotation
Scapular dyskinesis

- Clinical observation:
  - altered rest position
  - medial border prominence
  - “Protraction”
Scapular dyskinesis

- Functional consequences
  - Impingement symptoms
  - Decreased strength/balance/endurance
  - Altered external rotation
  - Scapular border pain

We need to examine the scapula as part of the comprehensive shoulder exam

Problems with current scapular assessment methods
• Poor reliability
• Poor correlation with biomechanical motions
• Poor correlation with causative factors
• Not associated with a specific diagnosis
• Observational

3rd Scapular Summit
• Consensus from existing literature, practice
• Evaluation techniques
• Correlation- interventions
• Future research directions
• Kibler et al JOSPT 39(11): 1A-13A, 2009

4th Scapular Summit
• Consensus from research
• Clinical implications of dyskinesis- associated with shoulder injury
• Dyskinesis- impairment
• Kibler et al BJSM, in press April 18 2013 Online First
Why do the exam

• Not to make a specific dx-scapula, shoulder
• Not to establish cause/effect of shoulder injury
• Not to predict an injury

Why do the exam

• Put the scapula in a context in relation to the shoulder dysfunction
• Understand how the impairment can be linked with the symptoms

Why do the exam

• Establish presence/absence-altered position/motion
  – Yourself, patient
• Establish type of dyskinesia
  – Dysrhythmia- “jerk”, wing-medial prominence
Why do the exam

• Help provide clues for rehab
  – Altered positions
  – Muscle tightness or inflexibility
  – Muscle weakness or imbalance

Why do the exam

• Corrective maneuvers
  – Demonstrate role of dyskinesis in production of symptoms, dysfunction
  – Your benefit
  – Patient buy in for rehab

Why do the exam

• Corrective maneuvers
  – Scapular Assistance Test
  – Scapular Retraction Test
  – Scapular Reposition Test
• Correlate- change in symptoms
Why do the exam

• Other helpful tests
  – Pectoralis minor/biceps short head inflexibility
  – GIRD, TROMD
  – Strength tests- scapular stabilization muscles

Why do the exam

• Other helpful tests
  – G-H internal derangement
  – A-C joint instability
  – Core stability/strength-one leg stability series

SCAPULAR EXAM

- Establish presence/absence of dyskinesis
  - Effects of corrective maneuvers
Clinical observation

- Position – medial border
- Motion – dyskinesis patterns: I (inferior medial), II (medial), III (superior medial) – yes/no
- 3-5 repetitions, flexion, 3-5 pound weights

“Yes/No”

- “Yes” (seen)/“No” (not seen)
- Specificity .64/ sensitivity .82/ (+) PV .84 compared to bone position
- Clinically useful, similar to other shoulder exam tests

Scapular dyskinesis assessment

- Multiple ascent/descent
- Weights
- Observation/video
- K = .57, .54 – moderate
- Correlated with biomechanical testing
  - McClure et al JAT 44(2): 160-164, 2009
  - Tate et al JAT 44(2): 165-173, 2009
EVALUATION

• Corrective maneuvers
  Scapular Assistance Test
  – Assist scapular up rot/post tilt
  – (+) - Relief ext impingement sx
  – Kibler, W.B. AJSM 26: 325-337, 1998

Scapular Assistance Test

• Reliable assessment tool in patients with shoulder disorders
  91% agreement in flexion (k = .61)
  77% agreement in scaption (k = .53)
  – Rabin et al., JOSPT 2006

• It is unclear how much scapular motion is being altered with these tests?

Scapular assistance test

• Assisted scapular motion with arm elevation
  • (+) = reduced painful arc sx
  • K = .61, 91% agreement
  • Scapular position change, increased posterior tilt
  – Kibler WB, Uhl TL (unpublished data)
SAT Results: Posterior Tilt

Main Effect: SAT (5°) > Unassisted (-2°)
p = .007

EVALUATION

- Corrective maneuvers
  - Scapular Retraction Test
    - Assist scapular ext rot/post tilt
    - (+) Inc rot cuff strength, relief-int impingement

Scapular retraction/reposition tests

- Stabilized scapular position (manual)
  - (+) = inc. rotator cuff strength, dec. internal impingement sx
- Scapular position change – increased posterior tilt, increased retraction
  - Kibler et al AJSM 34(10): 1643-1647, 2006
  - Tate et al JOSPT 38(1): 4-11, 2008
Dyskinesis in symptomatic shoulder

- Altered motions present
- Evaluate for causative factors
- Use as basis for rehab
- Rehab as part of comprehensive program
THANK YOU