The Swimmer’s Shoulder: An Osteopathic Approach

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Goals & Objectives

• Become familiar with shoulder examination
  • Musculoskeletal exam
  • Functional exam
  • Imaging
• Discuss common examination of swimmer’s shoulder
• Demonstrate osteopathic manipulation for:
  • Occipital Release
  • Thoracic outlet release
  • Muscle energy to SCM, trapezius, levator scapulae
  • Seven Stages of Spencer
• How to appropriately code for billing for OMM
Weekly Swimmer Activity

• Practice 6 to 7 days
• 20 to 30 hr
• 10,000 - 14,000m
• 16,000 to 25,000 shoulder revolutions
• Year round, off 3 wk/yr
• Mainly freestyle

• Poor mechanics + fatigue = overuse injuries
Poor Mechanics = Imbalance

- Crossing Midline
- Flat Body Positioning
- Dropped elbow
- Unilateral breathing

- Kick board
Common Shoulder Injuries for the Swimmer

- Shoulder
  - Multidirectional Instability
  - Little League Shoulder
  - Impingement
Multidirectional Instability

• History
  • Chronic shoulder pain
  • Popping during stroke
  • Numbness in hands

• Exam
  • Anterior posture
  • Tender at bicep tendon
  • Weak rotator cuff
Little League Shoulder

• History
  • Pediatric patient: non ossified
  • Chronic anterior shoulder pain
  • ↑ sport
  • Limiting performance

• Exam
  • TTP humeral physis

• Imaging
  • AP view: widened humeral physis
Little League Shoulder
Musculoskeletal Exam

• Step-by-step process: less invasive to more invasive
  • Prevent undue pain
  • Gain trust & relieve patient apprehension
  • Thorough exam

• Examine the joint above and below
• Examine the uninjured contralateral extremity
  • Comparison
  • Symmetry
Approach to Shoulder Exam

• Observation/Inspection:
  • expose the shoulder, symmetry, edema
• Neurovascular Assessment: pulses, warmth, sensation
• ROM: active → passive
• Palpation: Painful areas last
• Strength Testing
• Flexibility Testing
• Stability / Ligament Testing
• “Special Maneuvers”
Shoulder ROM

- Flexion
- Abduction
- Int Rotation
- Ext Rotation
Shoulder ROM & Strength

- Flexion
- Int Rot
- Ext Rot
Impingement

• Hawkins
  • Stabilize scapula
  • Abd shoulder 90°
  • Flex shoulder 30°
  • Flex elbow 90°
  • Internally rotate
  • Pain +

• Neer’s
  • Stabilize scapula
  • Internally rotate
  • Flex shoulder
  • Pain +
Shoulder Instability

• Load & Shift Test:
  • Ant/post force
  • Humeral head to glenoid
  • Mild Mod Severe

• Sulcus Sign
  • Downward traction humeral shaft
  • Acromion to humeral head
  • > 2 cm
Apprehension & Relocation

- Patient supine
- Stabilize scapula
- Abd & ext rotation
- Anterior force
Labral Tear

- Crank Test
  - Abd shoulder
  - Axial load humerus
  - Int & Ext rotation
  - Click, pain +
Treatment

• Physical therapy and home exercise program to address posterior scapular stabilization

• Limited participation → decrease practice

• OMM expedites return
  • Improves AROM
  • Restores symmetry
Contra-indications to OMM

• **ABSOLUTE**
  • Fractures of the vertebrae, clavicle, humerus, ribs
  • Cervical instability traumatic
  • Nerve root avulsion
  • Bone metastasis to cervical spine

• **Cautions**
  • Cervical instability from Down’s Syndrome (C1-C2 instability) and severe cervical OA
  • Disc herniation
  • Spinal stenosis
  • Hemophilia (direct techniques)
  • Uncooperative patient
  • Medical-legal issues: pediatric patients, chaperone
Osteopathic Manipulation

• Somatic dysfunction of the swimmer’s shoulder
  • Cranial
  • Cervical
  • Thoracic
  • Lumbar
  • Ribs
  • Upper extremity
  • Thoracic Outlet
  • Abdomen
OMM Techniques

• Myofascial release cervico-thoracic outlet
• Sub-occipital release
• Thoracic Inlet treatment (Indirect)
• Muscle energy for trapezius / levator scapulae / SCM
• Occiput-C1 muscle energy
• C1-C2 muscle energy
• Seven stages of Spencer
Myofascial Release of Cervico-Thoracic Outlet Technique

- Place thumbs on 1st ribs near cervico-thoracic junction

- Evaluate rotation and side-bending (1st rib moves caudal)

- Gently apply pressure with thumb in direction of the ease of motion until tissue relaxes or motion is less asymmetric
  - Optional: Approximate hands during techniques to enhance release

- Picture shows ease of motion in side-bending and rotation to the right
Sub-occipital Release

• Place hands near inferior nuchal line
• Lift head up onto fingertips
• Allow a slow release of tissues under head until head is back to neutral
• Repeat 2-3 times
Muscle Energy for Trapezius

- Place distal hand near AC joint
- Place superior hand on occiput
- Side bend away with small amount of cervical flexion
- Ask pt to shrug shoulder
- Ask pt to move head to neutral
- Alternate command motion
- Repeat 2 times
Muscle Energy for Levator Scapulae

- Place distal hand near superior border of scapula
- Place superior hand on C2/C3
- Side bend away with cervical rotation and flexion
- Ask pt to shrug shoulder
- Ask pt move head to neutral
- Alternate command motion
- Repeat 2 times
Muscle Energy for Sternocleidomastoid (SCM)

• Place distal hand near superior clavicle
• Place superior hand on mastoid process
• Side bend away and rotate towards treatment side
• Ask pt to shrug shoulder
• Ask pt to move head to neutral
• Alternative command motion
• Repeat 2 times
Occipital-Atlantal Muscle Energy Treatment

- Diagnosis:
  - Induce mild cervical flexion
  - Translate L & R
  - Repeat with mild cervical extension
  - Note direction of ease & restriction
  - Picture shows OA restricted right

- Treatment:
  - Translate head into restriction
  - Ask patient to push head to neutral for 3 secs (yellow arrow)
  - Return patient head to neutral
  - Repeat 2 times
Atlanto-Axial Muscle Energy Treatment

• Diagnosis:
  • Introduce 30-45 degrees of cervical flexion
  • Introduce rotation to R/L
  • Note area of ease & restriction
  • Picture shows AA restricted right

• Treatment:
  • Rotate pt head into restriction
  • Ask pt to rotate head to neutral (yellow arrow)
  • Repeat 2 times
Seven Stages of Spencer’s Technique for the Shoulder

- 1 Extension with elbow flexion
- 2 Flexion with elbow extension
- 3 Circumduction with compression
- 4 Circumduction with traction
- 5 Abduction
- 6 Internal rotation
- 7 Pumping, elbow extended
Step 1: Extension with elbow flexion

- Cephalad hand stabilize GH
- Caudad hand engages extension to barrier
- Patient applies isometric counter force 3-5sec
Step 2: Flexion with elbow extension

- Caudad hand stabilizes GH with cupping
- Cephalad hand flexes pt shoulder to barrier
- Patient applies isometric counterforce 3-5 sec
- Flex to engage new barrier
Step 3: Circumduction w/ compression

- Cephalad hand stabilizes
- Caudad hand abducts and flexes elbow, applies compression
- Small circles of clockwise then counter-clockwise motion
- ME techniques may be applied for barriers
- Modify elbow pressure & direction for areas of resistance
Step 4: Circumduction w/ traction

- Cephalad hand stabilizes
- Caudal hand abducts and extends elbow, applies traction
- Small circles of clockwise then counter-clockwise motion
- ME techniques may be applied for barriers
- Modify elbow pressure & direction for areas of resistance
Step 5: Abduction

- Cephalad hand stabilized GH
- Inferior hand stabilize flexed elbow
- Abduct shoulder to barrier
- ME force 3-5 sec
- Engage new barrier
Step 6: Extreme internal rotation

- Cephalad hand stabilizes GH
- Caudad hand flexes elbow and internally rotates shoulder
- Engage barrier of internal rotation by pushing elbow forward
- Pt applies isometric counterforce 3-5 sec
- Engage new barrier
Step 7: Pumping, elbow extended

- Extend pt elbow, abduct shoulder, rest hand on DO shoulder
- Cup hands on head of humerus
- Apply rhythmic caudal force with mild traction to create pumping motion to joint
- Repeat in circular motion along humeral head
Billing & Coding

- Document: Patient was referred/evaluated for shoulder pain & OMM was performed
  - Hint: Try NOT to say patient seen for OMM only
- Established patient/New patient/Consult
- 25 Modifier: separately identifiable service performed
- Somatic dysfunction areas treated (98927 for OMM to 5-6 areas):
  - Head / Cranium
  - Upper extremity
  - Cervical
  - Thoracic
  - Ribs
- In-office exercises taught and successful demonstrated
  - 97110- “Therapeutic procedure, 1 or more areas, each 15 minutes; therapeutic exercises to develop strength and endurance, range of motion and flexibility”
QUESTIONS?