Specific treatment for the SI joint

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Objectives

- Describe the connection between the low back, pelvis, and lower extremity that can have impairments that promote sacroiliac joint dysfunction
- Demonstrate postural assessments and cluster tests to determine type of sacroiliac dysfunction
- Perform an initial treatment technique for the most common sacroiliac dysfunction and differentiate when to refer to a physical therapist.
Assessment

○ Mechanism of Injury
○ Pain Location
○ Posture
○ Special tests
  ○ Primary Stress tests
  ○ Secondary Stress tests
○ Kinetic Tests
○ Positional Tests
○ Sacral positioning
○ Palpation
Posture

- Visual Observation/palpation
- Plum Line
Special Tests

Primary Stress Tests
- Anterior Gapping
- Posterior Gapping
- Rotary Stress

Secondary Stress Tests
- Stoddart’s
- Rotary stress x 20 second hold
- Superoinferior stress
- Sacral corner stress
- Sacrotuberus ligament palpation
- Long dorsal ligament palpation

Cluster of tests:
- Fortin’s sign
- Primary Stress Tests
  *High Sensitivity for SIJ pathology

Lucido 2012
Anterior Gapping

Posterior Gapping

Rotary Stress
Stoddart's

Sacral Corners

Long Dorsal Ligament Stress

Superoinferior Stress
## Kinetic Testing

<table>
<thead>
<tr>
<th>In Weight bearing</th>
<th>In Non-weight bearing</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>+</td>
<td>Stable subluxation</td>
</tr>
<tr>
<td>+</td>
<td>-</td>
<td>Unstable subluxation (DO NOT MANIPULATE)</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>Myofascial, pericapsular</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>Normal or hypermobile</td>
</tr>
</tbody>
</table>

- Forward Flexion
- Backward Flexion
- Gillet Test
- Seated Flexion Test (Piedallu’s Test)

Stupansky 2013
Positional Tests

- Assessment of Landmarks
  - Standing
  - Sitting flexed
  - Supine
  - Prone propped on elbows
- Supine to sit
- FABER
- Active SLR
- Sacral torsion
Standing Extension

Gillet’s Test

Forward Flexion

FABER

Flexibility Assessment
Can’t forget the...

Pubic Symphysis

- Supported by ligamentous structure
- Impacted by instability
  - Pain is Local, disabling, and aggravated by unilateral weight bearing

Clinical Test: Shearing one pubic cranially and other caudally

Stupansky 2013
Treatment Techniques
Treatment

- Refer to Physician
- Strengthening
- Muscle Energy Techniques
- Joint Mobilization / Manipulation
- Joint Stabilization
Strengthening

- Engage the core
- Dynamic lumbar stabilization progression
- Hip strengthening
- Flexibility
- Functional skills
- Balance control

* Focus on neutral pelvis/reduce drop
* Coordination of core/pelvis strengthening
* Incorporate pelvic floor
Engage the Core
-Add Bridge
-Dynamic Lumbar stabilization progression
-Add abduction resistance at knees
-Progress to planks
Flexibility

- Piriformis stretch
- Hamstring stretch
- Hip flexor/iliopsoas stretch

Dynamic warm up
Foam Roller
Muscle Energy Technique (MET)

- Hip abduction/adduction (belt/ball)
- Hip flexion/extension (push/pull)
- Sacral rotation correction
  - Iliopsoas
  - Piriformis
- Prone hamstring isometric contraction for posterior innominate rotation
Joint Mobility

Start of Range  Tissue Resistance  End of Range

Oscillation Grades

I

II

III

IV

V

O Pelvic Rocking
  O Anterior
  O Posterior

O Sacral mobilizations

O Lumbar mobilization

O HVLT
  O Distraction Manipulation
  O Rotation: Posterior / anterior
  O Lumbar flexion / extension
Mobilization

Anterior Rotation

Posterior Rotation

Lucido 2012
Stupansky 2013
Distraction Manipulation
Joint Stabilization

- Force vs Form Closure
  - Force: Stability from muscles supporting pelvis
    - Very vulnerable to shear forces
  - Form: Stability from self locking of pelvis
- Stabilization through exercise
- Stabilization through external support (belt)

Arumugam et al (2012)
Other Treatment Techniques

- Shoe Inserts
- Postural Re-education
- Functional Re-training
Case Study

- 16 year old Female with reports of low back pain and hip pain ~ 10 months

- History of (R) L5 Spondylolysis with TLSO wear – at time of eval wearing 8 hours per day

- Radiographic evidence of spondy being stable, but not healing

- Competitive soccer player
Pain

- 3/10, achy, constant
- Central low back
- Worst: 7/10
- Best: 0/10
- Aggravating: sitting on hard chair, stair ascend/descend, prolonged walking
- Relieving: rest, laying down, soft chairs
Impairments

- Tenderness to palpation (L) PSIS and ILA of sacrum, spasm (L) lumbar paraspinals
- Posture:
  - PSIS High on (L)
  - Rounded shoulders
  - Sacral sitting/posterior rotation
- ROM
  - Lumbar: flexion limited 10%, Extension : not tested
  - Hip and knee: WNLS bilaterally
- Flexibility:
  - Popliteal angle -10 degrees bilaterally
- Leg Length: (L) 85cm, (R) 84cm
- Strength: Reduced hip abduction/extension, pain (L) low back/hip with flexion/abduction resistance
Special Tests

- Nutated sacrum
- Primary Stress tests (+)
- Secondary Stress Tests (+)
- Supine to sit: (L) equal to short translation
- Standing flexion: (L) positive
- Gillet’s test: (L) Positive, posterior rotation
  - Shuttering in SIJ noted during movement
- Repetitive flexion: no peripheralization
- Slump test: Negative
- Joint play:
  - Hypomobility T8-12, L1-2
Assessment

- (L) sacroiliac joint anterior innominate rotation
- Reduced muscular stability in bilateral SIJ
- (L) hip abduction/extension weakness
- Core weakness
Treatment

O MET
  O Hip abduction/adduction
  O Hip flexor on Right
  O Hip flexion/extension

O Mobilization/Manipulation
  O Posterior innominate mobilizations Grade III-IV
  O Thoracic posterior anterior mobs Grade III-IV
  O T12-L1 grade V with above and below flexion locking

O Strengthening

O Stabilization Belt
Results

- Discharged TLSO without back, hip, or LE pain
- 1 occurrence of mild hypomobility in 6 weeks with ability to self correct and strengthen
- Progressed out of SIJ stabilization belt for all activities: Jog x 10-15 mins, soccer scrimmages
Questions?
References


Lucido, M. Level II Lower Quadrant. NAIOMT 610 Certification Course. Texas Woman’s University, Dallas. 2012. Lecture.


Stupansky, Kathy. Level III Lower Quadrant. NAIOMT 710 Certification Course. Texas Woman's University, Dallas. 2013. Lecture.
