Manual Manipulative Medicine: A Structural Examination for Lower Back Pain

Friday, October 2, 2015
10:30 AM - 12:00 PM
W116. Level: Beginner
No Financial Disclosures
• Amir Mahajer, DO
• Ronald Tolchin, DO
• Shounuck I. Patel, DO
• Samuel A. Yoakum, DO
• Gina Benaquista DeSipio, DO
• Arthur J. De Luigi, DO
• Julie Lanphere, DO
• Kristin Garlanger, DO
• Jonas Sokalof, DO
The structural examination is a key skill required to identify somatic dysfunctions. These dysfunctions may be treated by manual manipulation, such as Osteopathic Manipulative Medicine (OMM), in order to treat pain, asymmetry, restricted motion and soft tissue abnormalities. Many components of the structural examination mirror the physiatric spine medicine examination. The combination of the two evaluations work synergistically to Identify key lesions and to help clench the diagnosis in order to improve the patient's dysfunction.

In this workshop, we will describe manual medicine terminology, somatic dysfunctions, structural examination, common patterns and problems. We will demonstrate a sequenced structural examination for the manual medical practitioner with focus on the somatic evaluation in the scenario of lower back pain with hands-on practice and guided instruction.
Learning Objective

1. Introduction to somatic dysfunctions & osteopathic structural examination in lower back pain.

2. Demonstration and instruction of manual medical structural examination.

3. Principles and practice of somatic examination for common dysfunctions found in lower back pain.
Hands On Learning

In this workshop, we will describe manual medicine terminology, somatic dysfunctions, structural examination, common patterns and problems. We will demonstrate a sequenced structural examination for the manual medical practitioner with focus on the somatic evaluation in the scenario of lower back pain with hands-on practice and guided instruction.
Post Acute Non-Specific Low Back Pain Generators

- Disc Disease – 39% (Schwarzer, 1995)
- Facet Joint – 15% (Schwarzer, 1994)
- Sacroiliac Joint – 13% (Bogduk, 1995)
Temporal Course

Institute for Clinical Systems Improvement (ICSI) Health Care Guideline: Adult Acute and Subacute Low Back Pain. 5 November

- Low Back Pain (LBP)
  - Early Acute Phase = < 2 weeks
  - Late Acute Phase = 2 - 6 weeks
  - Subacute Phase = 7 - 12 weeks
  - Chronic Pain Phase = > 12 weeks
Incidence & Prevalence

• Acute & Subacute Back Pain

  • In 2002, 26.4% of Americans reported at least one day of LBP in the prior 3 months averaging 2.3% of all doctor visits with no significant change over 10 years.

• Chronic Back Pain

  • Chronic back pain, greater then 4 days per week for more then 12 weeks, has increased to 19.3% of adults (20 – 65 years old) in the 21st century.

(Deyo, 2002)
Lower Back Pain

• If lower back pain is not managed appropriately in the acute to subacute phases, chronic back pain may develop with increased rates of patient morbidity, disability and healthcare expenditures. (ICSI, 2012)
Early acute phase treatment considerations

- Core treatment plan *
- Consider spinal manipulative therapy (SMT): use clinical prediction rule
- Advice on activity/exercise
- No delayed-recovery risk assessment
- Recheck in one to two weeks

Subacute phase treatment considerations

- Core treatment plan *
- Delayed-recovery assessment
- Progressive exercise plan
- Consider referrals
  1. Spinal manipulative therapy
  2. Cognitive behavior therapy
  3. Work evaluation
  4. Medical spine specialist
Red Flags

20 Evaluate for infection

21 Evaluate for cancer

22 Evaluate for fracture

23 Saddle anesthesia or loss of bladder/bowel control?

24 Yes -> Rule out cauda equina

25 No -> Consider other non-spine pain origins

(ICS1, 2012)
Consider Spinal Manual Manipulative

- Use the successful treatment of lower back pain with manual manipulative medicine with greater than 90% certainty in acute and subacute lower back pain.

- Quality of Evidence: Moderate

- Strength of Recommendation: Strong

(Fritz, 2007; Fritz, 2005; Childs, 2004; Flynn, 2002)
Clinical Prediction Rule

1. Durations of symptoms < 16 days

2. At least one hip with less than 35 degrees of medial (internal) rotations

3. Lumbar hypomobility

4. No symptoms distal to the knee

5. Fear-Avoidance Beliefs Questionnaire work subscale score < 19.
Fear-Avoidance Beliefs Questionnaire

- FABQ: ____________
- FABQ: Physical Activity Subscale
- Higher scores, indicate increased fear & avoidance.

(Waddell, 1993)
Terminology

• Manual Manipulation
• Osteopathic Manipulative Medicine (OMM)
• Somatic Dysfunctions
• Tensegrity
• Fryette’s Laws
• Structural Examination
Manual M

Hands-on manipulation, mobilization or massage techniques involving articulations and/or soft tissues in order to modulate pain, alter range of motion, facilitate
Tenets of Osteopathic Medicine

1. The body is a unit; the person is a unit of body, mind, and spirit.

2. The body is capable of self-regulation, self-healing, and health maintenance.

3. Structure and function are reciprocally interrelated.

4. Rational treatment is based upon an understanding of the basic principles of body unity, self-regulation, and the interrelationship of structure and function.

(osteopathic.org)
What is a Physiatrist?

1. Diagnose and treat pain
2. Restore maximum function lost through injury, illness or disabling conditions
3. Treat the whole person, not just the problem area
4. Lead a team of medical professionals
5. Provide non-surgical treatments
6. Explain your medical problems and treatment/prevention plan

(aapmr.org)
Somatic D

Impaired or altered function of any components of the body’s framework: musculoskeletal, arthrodial, myofascial, vascular, lymphatic, and neural

<table>
<thead>
<tr>
<th></th>
<th>Acute</th>
<th>Chronic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tissue Texture</td>
<td>Inflamed</td>
<td>Fibrotic</td>
</tr>
<tr>
<td>Asymmetry</td>
<td>Local</td>
<td>Compensated</td>
</tr>
<tr>
<td>Restriction</td>
<td>+ Pain w/ ↓AROM</td>
<td>+/- Pain w/ ↓AROM</td>
</tr>
<tr>
<td>Tenderness</td>
<td>Sharp</td>
<td>Dull</td>
</tr>
</tbody>
</table>
Somatic Dysfunction

Four diagnostic criteria of somatic dysfunction:

1. Tissue texture abnormality
2. Asymmetry
3. Restriction of motion
4. T
Somatic dysfunction: proprioceptive and nociceptive components

- **Increased gain of stretch receptors**
  - Why?
  - Unexpected movements with excessive reflex activation of muscles?

- **Increased spindle sensitivity**

- **Increased gamma efferent activity**

- **Facilitation in spinal cord**

- **Guarding**

- **Pain**
  - Why?
  - Many causes, including trauma

- **Hyperactive muscles**
  - Tissue texture change
  - Restriction of motion from resistance of muscles to lengthening
  - Asymmetry

- **Locally compromised circulation**, including lymphatics, in region of hyperactive muscle

- **Edema** (Tissue texture change)

- **Ischemia** (Tenderness and pain)

---

**Tension increases as passive motion progresses from neutral thru the Physiologic Barriers to the Anatomic Barriers**

---

**Restrictive Barrier**

**Minor Motion Loss**

**Physiologic Barrier**

**Passive Range**

**Active range**

---

**ROM**
Manual Manipulative Medicine

Direct T

- Engage (go into) the dysfunctional barrier
- Goal is moving through the barrier to restore normal motion

Indirect

- Disengage (go away from) the barrier
- Using the path of least resistance

Combined Techniques

- Begin indirect, then go direct
Select Manual Techniques

- Soft Tissue Mobilization (Direct)
- Myofascial Release (Direct or Indirect)
- High Velocity Low Amplitude (Direct)
- Articulatory Techniques (Direct)
- Muscle Energy (Direct)
- Strain-Counterstrain (Indirect)
- Balanced Ligamentous T
- Craniosacral (Direct or Indirect)
Tensegrity

Tensional Integrity
• Conceptually
• Self Supporting & Correcting
• Preload & Prestress System
• Provides Mechanical Stability
10 Step Screening Exam

1. Gait and Posture
2. Standing Lumbar Side-bending test
3. Standing Flexion Test
4. Seated Flexion Test
5. Seated Cervical Motion Test
6. Seated Thoracic Trunk Rotation Test
7. Seated Thoracic Trunk Sidebending Test
8. Upper Extremity Motion Test
9. Supine Rib Cage Motion Test
10. Lower Extremity Motion Test
Osteopathic Structural Exam

- “The Stiles Screen”
- Identify the “key lesion,” not the pain.
- Target this Area of Greatest Restriction
- Utilities Fryette’s third law of spinal mechanics
Fryette’s Laws of Spine Mechanics

1. **Neutral**
   is ____________ __________
curve dysfunction, Type 1.

2. **Non-neutral**
bending and rotation to the ____
side, ____
Type 2. (Fryette, 1918)

3. Force applied in one plane will
   effect motion in the other two
   planes
Structural Examination

- The screen standing and seated position.
- One hand introduce minimal segmental flexion and side-bending at the shoulders.
- The opposite hands thenar eminence adds rotation. The lighter the force the more obvious the restriction.
- Maximal compression pushes the segment into the physiologic barrier.
Structural Examination

• When testing from the right side the right hand is controlling spinal forward flexion and right side-bending.

• The left hand adds minimal rotational forces to diagnose the area of greatest restriction.

• The spinal screen assesses form the occiput to the sacrum bilaterally standing and seated.
Standing vs Sitting

• If the exam changes from standing to sitting this may represent a dysfunction of the base either the pelvis and or lower extremities.

• Standing flexion test evaluates the base.

• Sitting flexion test evaluates the sacrum.
Structural Examination for Lower Back Pain

- Identify the “Key Lesion.”
  - Lumbar Dysfunction
  - Sacral Dysfunction
  - Innominate
  - Pubic Dysfunction
  - Lower Extremity Dysfunction
Common Dysfunctions

- Trigger Points / Tender Points
- Lumbar Type 1 Dysfunctions
- Pubic Shears
- Innominate Rotations
- Sacral Forward Torsions
- Functional Leg Length Discrepancy
- Hip Restrictions: Piriformis / Iliopsoas Dysfunctions
- Lower Extremity Dysfunctions (Not Covered)
Reference Codes

CPT: Osteopathic procedure codes
outpatient

• 98925 = 1-2 body regions
• 98926 = 3-4 body regions
• 98927 = 5-6 body regions
• 98928 = 7-8 body regions
• 98929 = 9-10 body regions
ICD-9 OMM Codes

739 = Nonallopathic lesions, not elsewhere classified (Includes Segmental Dysfunction & Somatic Dysfunction)

739.0 = Head & Occipitocervical regions
739.1 = Cervical & Cervicothoracic regions
739.2 = Thoracic & Thoracolumbar regions
739.3 = Lumbosacral region
739.4 = Sacral and sacroccygeal regions
739.5 = Pelvic region
739.6 = Lower extremities
739.7 = Upper extremities, AC and SC regions
739.8 = Rib cage, costochondral and costovertebral regions
739.9 = Abdomen and other
ICD-10-PCS Codes

7W0 = Osteopathic, Anatomical Regions, Treatment
7W00 = Head & Occipitocervical regions
7W01 = Cervical & Cervicothoracic regions
7W02 = Thoracic & Thoracolumbar regions
7W03 = Lumbosacral region
7W04 = Sacral and sacrococcygeal regions
7W05 = Pelvic region
7W06 = Lower extremities
7W07 = Upper extremities, AC and SC regions
7W08 = Rib cage, costochondral and costovertebral regions
7W09 = Abdomen and other
ICD-10-PCS Codes

Each anatomical region is further subdivided by technique:

7W0_X_Z = Osteopathic treatment of ____ Region using ____
7W01X0Z = Cervical region using Articulatory-Raising forces
7W01X1Z = using Fascial Release
7W01X2Z = using General Mobilization
7W01X3Z = using High Velocity-Low Amplitude Forces
7W01X4Z = using Indirect Forces
7W01X5Z = using Low Velocity-High Amplitude Forces
7W01X6Z = using Lymphatic Pump
7W01X7Z = using Muscle Energy-Isometric Forces
7W01X8Z = using Muscle Energy-Isotonic Forces
7W01X9Z = using Other Method