

Facilitator's Guide

Section I: OMM Case Presentation. Prior to the next OMM session Residents should read the case below and be prepared to discuss the questions in Section II

Case Presentation

Chief Complaint: Left sided pain, greatest in lower extremity.

Patient History: Osteopathic Manual Medicine outpatient clinic is consulted by Neurology service regarding a 67-year-old right handed female with a complaint of left sided pain that is greatest in the lower extremity. The pain is rated at a 7, on a 0-10 pain scale. She describes the pain as slowly increasing in intensity over the last year. It is alleviated with pain medications and is exacerbated with walking and standing. She also reports left lower extremity swelling which has been unrelieved with diuretics and compression dressing. Per patient, Venous Doppler for deep venous thrombosis was negative in left lower extremity. Patient reports falling approximately one month ago in the middle of the night, and since that time she has been leaning to the right. Upon further questioning, she admits to falling at least once a week. She denies striking her head or loss of consciousness when falling, but states that she usually "catches" her foot, which causes the fall.

Family History: Mother: cause of death unknown (at young age), Father: Myocardial infarction, Grandparents: unknown cause of death, no siblings, 2 grown sons both are healthy.

Social History: Married, housewife, 2 grown children, denies any tobacco, alcohol or street drug use. 1-2 caffeinated beverages daily. Ranch-style home with 2 steps to enter.

Allergies: Darvon (propoxyphene), sulfa drugs.

Meds: Neurontin (gabapentin), Zoloft (sertraline), Amitriptyline, Lyrica (pregabalin), Oxycontin, OxyContin immediate release, Lasix (furosemide)

PMH: Multiple Sclerosis (MS) diagnosed 11 years ago no recent exacerbations. Chronic constipation and incontinence related to MS, Cervical cancer, and right short leg for which she wears a 11mm shoe lift.

PSH: Hysterectomy in 1989, bladder tack, denies any fractures. Patient does admit to occasional falls at home. Upon further questioning, she has been falling a couple of times per month due to right-sided weakness.

Review of Systems

Constitutional: Fatigue.

Skin: Denies.

Blood/Lymph/Endocrine: Swelling & cold in extremities.

ENT: Tinnitus.

Eyes: Wears corrective lenses.

Cardiovascular: Denies

Pulmonary: Denies.

GI: Constipation.

GU: Urinary incontinence.

Musculoskeletal: Frequent arthralgias in neck and hands.

Neurologic: Cramping, numbness & tingling in hands & feet, and difficulty walking.

Psychiatric: Denies anxiety, depression.

Physical Exam

Vitals: BP 98/60, HR 84, Resp 20, Ht 5'4", Wt 127, BMI 22.

General: Thin, elderly appearing female in no acute distress, good hygiene.

Eyes: Pupils equal, round & reactive to light and accommodation, extraocular muscles intact.

ENT: Nares patent with pink mucosa, oral cavity moist without exudate or lesions noted, no lymphadenopathy palpated, tympanic membranes clear.

CV: Regular rate & rhythm, pulses strong in all 4 extremities, left lower extremity with generalized non-pitting edema distally to mid-thigh, negative Homan's sign.

Respiratory: Clear to auscultation bilaterally.

GI: Abdomen soft, non-tender, no masses or hepatosplenomegaly palpated, normal active bowel sounds.

GU: Deferred.

Musculoskeletal: 5/5 manual muscle testing of bilateral upper & lower extremities in all major muscle groups for patient's age. Range of motion of shoulder & hip girdles within functional limits.

Motor: fine finger movements better on the left.

Neurologic: Alert & oriented x 3, normal affect, cranial nerves II-XII intact, nystagmus on upgaze, deep tendon reflexes 3+/4+ in left upper and bilateral lower extremities, 2+/4+ right upper extremity. Hoffman's sign positive at the left hand, Sensory decreased to light touch on the left arm & leg, allodynia of both arms. Mild spasticity of both lower extremities.

Gait: Ambulates with single point cane held in right hand for ambulatory assistance, narrow based stance with mild-moderate scissoring, head flexed, looking at floor, increased sidebending at the waist causing listing to right.

OMM Focused Structural Exam

Posture: Head tilted left, increased thoracic kyphosis, internal rotation at the shoulder girdle, anterior head carriage, listing to right with standing & sitting.

- Right sidebending at waist increases when patient ambulates or closes eyes. When patient is placed in a standing upright position, she feels off balance & "crooked", immediately resuming right sidebending. OA ESrLI, C3 ERSr, C7 FRsR, T1-2 F RSr, T6-9 NRISr,
- Right anterior innominate rotation, Left anterior fibular head, bilateral sacral restriction, bilateral paraspinal musculature tightness of the cervical, thoracic and lumbar spine.
- Rib 9 on the right was exhaled; Ribs 2,4,7 were exhaled on the left with restricted motion of the left lower rib cage, bilateral tight hamstrings, iliopsoas and a left piriformis tender point.

Assessment:

Leg pain/edema: venous thrombosis, venous varicosities, and lymphatic obstruction in groin/pelvic region on left by space occupying mass, occult hip/leg fracture.

Postural abnormality: CVA in cerebellum, fall, worsening spasticity due to multiple sclerosis, visual disturbance, canalithiasis (dislodged otolith), occult hip fracture. Weak hip extensors, tight hip flexors.

Section II: Focus of the Case (approximate time 20–30 minutes)

Discussion Questions

Teaching Points

<p>1. Propose an appropriate differential diagnosis / assessment</p>	<p>Differential Diagnoses:</p> <p>1. Leg pain/edema: venous thrombosis, venous varicosities, and lymphatic obstruction in groin/pelvic region on left by space occupying mass, occult hip/leg fracture.</p> <p>Postural abnormality: CVA in cerebellum, fall, worsening spasticity due to multiple sclerosis, visual disturbance, canalithiasis (dislodged otolith), occult hip fracture. Weak hip extensors, tight hip flexors.</p>
<p>2. What is your final diagnosis?</p>	<ul style="list-style-type: none"> • Primary Diagnosis: E888 Accidental fall. • Secondary Diagnosis: 340 Multiple sclerosis, and 788.30 Urinary incontinence. • Somatic dysfunction related to diagnosis: 739.0 Head, 739.1 Cervical, 739.2 Thoracic, 739.3 lumbar, 739.4 Sacrum/Sacroiliac, 739.5 Hip/Pelvis, 739.6 Lower Extremity, and 739.8 Rib.
<p>3. How do you explain the current structural findings in the context of this case?</p> <ul style="list-style-type: none"> • Are any relevant structural findings missing? • What would you do differently? • Why? 	<p>Most of the patients structural examination findings are compensatory, to maintain her in an upright position, over a center of gravity that was deviated to the right. Her tight paraspinal muscles maintained her in a coronal plane, attempting to compensate for the rotation and side-bending somatic dysfunction palpated in the spinal column.</p>
<p>4. What pathophysiology & functional anatomy knowledge is pertinent for diagnosing/treating this patient?</p>	<ul style="list-style-type: none"> • Postural imbalance & gait instability are particular issues with geriatric patients. • Peripheral sensory input significantly provides for the maintenance of upright posture. • Aging is associated with a decrease in postural balance that increases the risk of falling. When a patient falls, they tend to fall to the side, fracturing a hip. As the person ages, visual, labyrinthine & somatosensory inputs change their contribution to the dynamic maintenance of standing posture. • Upper thoracic flexion & decreased cervico-occipital extension affect head position, lowering the visual field from the horizon & shifting the neutral position of the vestibular apparatus. • The head-flexed position significantly increases postural instability. The loss of muscle mass & strength associated with aging impairs compensation. The patient's history of multiple sclerosis greatly impacts her strength, balance, proprioception and visual acuity. This places her at a higher risk of falling and fracturing a hip or sustaining a closed head injury. • Urinary incontinence also places the patient at a greater risk of falling.

<p>5. What will be your highest yield regions?</p>	<p>Indirect Myofascial release of the truncal muscles would be the highest yield. Muscle energy techniques may worsen spasticity. No standing techniques due to risk of a fall. Exercise caution when transitioning patient from supine to standing due to risk of dizziness & fall risk.</p>
<p>6. How does previous trauma influence these regions?</p>	<p>Patient denies any fracture history, but has been falling frequently which may result in hip or vertebral compression fracture or closed head injury.</p>
<p>7. Which 1 or 2 of the aspects below has the greatest influence on the patient complaint?</p> <ul style="list-style-type: none"> • Pain • Fluid congestion • Hyper-sympathetic influence • Parasympathetic influence 	<p>Pain and fluid congestion of the left lower extremity is what brought her to our clinic, but both are due to postural abnormalities.</p> <p>Normally parasympathetics could be a cause of urinary incontinence and constipation, but with the patient's history of Multiple Sclerosis, her bowel and bladder issues are central in nature. A hysterectomy may also cause incontinence, but not in this patient's case.</p>
<p>8. What are the acute or chronic aspects?</p>	<p>Acute: Risk of falling and fracture or head injury due to postural abnormality.</p> <p>Chronic: Worsening of multiple sclerosis</p>
<p>9. Devise an appropriate treatment plan based on musculoskeletal components involved in the patient complaint</p>	<p>Goals for osteopathic manipulative management—includes: Lengthen hamstrings, iliopsoas muscles, strengthen hip extensors, and improve proprioception and balance. Recheck postural type. Radiologic studies to re-evaluate right short leg to ensure proper lift height. Caution should be used, not to fatigue, or over heat the patient, both of which can worsen weakness associated with multiple sclerosis.</p> <p>The treatment plan could include: Indirect Myofascial release to the truncal musculature, balanced ligamentous tension applied to innominate, fibula and sacrum. Articular techniques or facilitated positional release to the cervical spine, ribs and tight muscle groups.</p> <ul style="list-style-type: none"> • Also instruct patient to check self frequently in mirror to encourage upright posture.
<p>10. How soon would you see the patient for OMM follow-up?</p>	<p>The geriatric population has a relatively strong response to relatively little stress and may have a rebound reaction to OMT. She may feel more fatigued, or have increased pain. This may last for 12 to 48 hours. The patient should be given 3 days to 2 weeks between OMT interventions to allow the body to come to a new homeostatic point.</p>
<p>11. What are the outpatient, inpatient, and emergency room considerations?</p>	<p>She is being seen as an outpatient, therefore, see above.</p> <p>As an inpatient for a non-related illness, she may decompensate easier and become weaker quicker due to her Multiple sclerosis.</p> <p>If presenting to the ER with a sudden increase in loss of balance, weakness or vision change, she should be evaluated for a CVA or exacerbation of multiple sclerosis.</p>

<p>12. How are you going to talk to your patient about their complaint and your treatment?</p> <p>12 Continued...</p>	<p>Educate about decreasing fall risk in the home. Educate about postural imbalance and indirect treatment approach before performing techniques.</p> <p>After OMT is performed, prescribe physical therapy to continue working with patient for strengthening of hip extensors, balance and proprioception, as short-term goals. Long-term goals could be initiation of daily walking program, weight lifting with very light weights and stretching of large muscle groups to maintain range of motion.</p>
<p>13. How will you communicate your findings, diagnosis, and rationale for OMM treatment to your preceptor?</p>	<p>The pertinent positive and negative findings from the history and physical will be presented. Treatment options will be discussed. Long term management and consultation requirements will be discussed. Any questions will be addressed at this time.</p>
<p>14. What coding and billing information for evaluation and management and procedural services will you generate?</p>	<p>E/M- 99244 Comprehensive – Mod.</p> <p>Diagnosis- E888 Accidental fall, 340 Multiple sclerosis, and 788.30 Urinary incontinence, 739.0 head, 739.1 cervical, 739.2 thoracic, 739.4 sacral/sacroiliac, 739.5 hip/pelvic, 739.6 lower extremity, 739.8 rib.</p> <p>Procedure codes- 98928 Manipulation 7-8 areas.</p>
<p>15. How would you record your encounter and OMT on your patient care logs?</p>	<p>Enter patient data, diagnosis date, and any special comments.</p>

Procedure Services: Osteopathic Manipulative Treatment					
Code		Description			
98925		Manipulation, 1-2 areas			
98926		Manipulation, 3-4 areas			
98927		Manipulation, 5-6 areas			
X	98928	Manipulation, 7-8 areas			
98929		Manipulation, 9-10 areas			
CPT Diagnostic Codes: Rank in order of Importance					
Diagnosis			Somatic Dysfunction		
Code	Description	Code	Description	Code	Description
788.30	Urinary Incontinence	739.0	Head	739.5	Hip/Pelvis
		739.1	Cervical	739.6	Lower Extremity
		739.2	Thoracic	739.7	Upper Extremity
		739.3	Lumbar	739.8	Rib
		739.4	Sacrum/Sacroiliac	739.9	Abdomen

16. **Evidence-Based Medicine (EBM)** is the integration of best research evidence with clinical expertise and patient values, consistent with the legacy of Andrew Taylor Still “To improve the practice of medicine by understanding the true nature of the human patient” (Robert C. Davies, 2001). Evidence is found after appropriate search and a critical appraisal of the clinical and research evidence. The patient is educated about the evidence for the management chosen, but ultimately the physician will affirm the course of treatment based on clinical experience, patient’s values and evidence available.

Search for the best evidence references:

An appraisal of the osteopathic literature is critical to ensure the osteopathic paradigm is foremost in the philosophical application of information to patient care. Search of relevant and associated data from the osteopathic literature:

OstMed-Dr (<http://www.ostmed-dr.com:8080/vital/access/manager/Index>)

Other literature bases (systems or synopsis engines):

- Poems (www.info poems.com)
- Family Practice Inquiry Network (www.fpin.org)
- PubMed
- Ovid
 - Google Scholar

Section III: Workshop/Lab (approximate time 60 minutes)

Facilitator demonstrates the key treatment techniques.

1. Participants divide into groups at the table
2. At each table, discuss and practice the appropriate palpatory diagnosis for this patient
3. Facilitator demonstrates the key treatment techniques:
4. Participants should practice the following techniques on each other:
 - Indirect Myofascial release to the truncal musculature, balanced ligamentous tension applied to innominate, fibula and sacrum.
 - Articular techniques or facilitated positional release to the cervical spine, ribs and tight muscle groups.
5. At each table, while the techniques are being practiced:
 - a. Identify and practice good body mechanics for the physician and patient in treatment
 - b. Discuss the treatment plan
 - c. Discuss what palpatory findings should change on the patient after OMM treatment

6. Documentation

Residents demonstrate an appropriate documentation of this case including findings and treatment here...

Section IV: Final Wrap-up and Questions/Answers