

## ***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 on page 4***

### **Case Presentation**

***Chief Complaint:*** Painful menstrual bleeding and abdominal fullness

***History:*** Patient is a 39 year old female who complains of a dull cramping with her menses each month. Her symptoms have occurred since she began her period at age 13; however, they have been progressively getting worse since age 28 when she gave birth to her daughter. She admits her flow seems heavier, though she is not using more pads per day. She does admit that she now passes clots during the 2<sup>nd</sup> and 3<sup>rd</sup> days of her period, which she had not done previous to childbirth. Her menses typically lasts five days and comes regularly at 28 day intervals. She has pelvic pain throughout her menses. Every three to four months, she will miss a day of work due to the severe cramping pain. She notes that several days prior to her period, she has a feeling of fullness in her lower abdomen and is "achy uncomfortable". She has had one child, who was delivered vaginally at 39 weeks gestation without complications. She admits to having gonorrhea when she was 22 years old, which was treated with medication without complications that she knew of. She has had no other STDs. She is currently in a monogamous relationship with her husband of 7 years. When asked about birth control pills, she states that she used them in the past and that her cramping did decrease, but was still present. She has not used birth control since the birth of her first child, as she would like to have more children. She explained that she has not sought fertility treatment due to her strong faith and her belief that if God wants her to have more children, He will bless her with them.

***PMH:*** Obesity, Metabolic Syndrome, Multiple Sclerosis (dx 5 years ago), Auto-immune Hepatitis (dx 2 years ago)

***PSH:*** C-section, right knee arthroscopy for a plica, extraction of wisdom teeth, breast lump biopsy, benign (3 years ago), IUD placement (15 years ago), IUD removal (10 years ago)

***Meds:*** Prednisone, 5 mg PO daily, azathioprine (Imuran), 75 mg PO daily, interferon beta-1A (Avonex), 30 mcg (6 million units) IM q wk., amlodipine + atorvastatin (Caduet) 5/20 PO daily, daily multivitamin, vitamin B complex, selenium

***Allergies:*** penicillin and sulfa cause a rash.

***Social History:*** Pt admits to smoking marijuana from the age of 16-18, denies illicit drug use since. Pt denies tobacco use and rare alcohol use. Pt does not exercise. Pt describes her physical activity as limited to a rare leisurely walk with her daughter after work.

**Family History:** Mother deceased age 54, ovarian cancer; Father, 65, diabetes, obesity, venous stasis; paternal grandparents unknown; maternal grandparents, living, 85, Grandmother breast cancer survivor, 25 years, otherwise in good health; Grandfather, glaucoma, hypertension

**Review of Systems:**

**Constitutional:** pt admits to significant weight gain in the years after the birth of her daughter

**Respiratory:** pt denies asthma, bronchitis, dyspnea

**Cardiovascular:** pt admits to hypertension, dyslipidemia, in conjunction with her metabolic syndrome, denies chest pain/discomfort, palpitations, and murmurs

**GI:** pt denies gastritis, constipation, diarrhea, heartburn, nausea, vomiting

**Musculoskeletal:** pt denies joint pain and arthritis, admits to muscle pain and weakness associated with her multiple sclerosis,

**Neurologic:** admits to multiple sclerosis, diagnosed 5 years ago, denies paresthesias, seizures, loss of sensation, loss of consciousness

**Eyes:** admits to corrective lenses, admits to some ptosis and diplopia on days her multiple sclerosis is bad, denies changes in vision, blurry vision, seeing lights, dry eyes

**ENT:** denies tinnitus, pressure in ears, changes in hearing, denies rhinitis or allergies, denies hoarseness, sores in the throat

**Psychiatric:** denies bipolar disorder, obsessive compulsive disorder, schizophrenia, anxiety, nervousness. Admits to getting the "blues" when her multiple sclerosis flares, but otherwise states that she is generally healthy and content.

**Blood/Lymph/Endocrine:** admits to hypercoagulable state associated with her metabolic syndrome, denies bleeding diathesis, anemia, lymphoma, lymphadenopathy. Admits to metabolic syndrome and proinflammatory state (elevated CRP)

**Skin:** denies changes in texture, moisture, new skin tags, changes in freckles, appearances of new moles

**GU:** admits to painful menstruation, passing clots, denies changes in bladder habits, dysuria, polyuria, vaginal discharge or recent STD or symptoms of STDs

**Physical Exam:**

**Vitals:** Ht: 63", Wt. 190, BMI 35, HR 70, BP 135/85, RR 18

**General:** 39-year-old Caucasian female in no acute distress. Good hygiene, cooperative, and pleasant demeanor. Body habitus is overweight.

**Head:** normal cephalic, atraumatic. No patchy or thinning hair. No lacerations, bruises, or other discoloration.

**Eyes:** red reflex intact, 2 cotton wool spots noted on the right retina in the right upper quadrant, no papilledema, PERRLA, EOMI

**ENT:** ears are patent, tympanic membranes intact without erythema or fluid, nose has mild septal deviation to the left, mucosa is moist and pink, good oral hygiene, no erythema, post nasal drip, or sores present in the throat

**Respiratory:** lungs clear to auscultation bilaterally; percussion is resonant, good and equal excursion of the chest wall bilaterally on respiration

**CV:** heart rate and rhythm regular without murmurs, gallops, clicks, or rubs, no palpable thrills, no carotid bruits auscultated

**GI:** abdomen obese, non-tender, no masses palpated, bowel sounds present X 4 quadrants, no masses or polyps palpated on rectal exam, Hemoccult negative

**Neurologic:** CN II-XII intact, sensation intact to fine touch, temperature and vibration, sensation to vibration diminished on the right, sensation intact on the left. DTRs: C 5, 6, 7 2/4 bilaterally, L4, L5, 2/4 bilaterally, S1 2/4 on the left, 4/4 on the right.

**Musculoskeletal:** gait is normal, upper extremity strength 5/5 bilaterally, lower extremity strength 3/5 on the right, 5/5 on the left, anterior and posterior drawer, varus and valgus stress negative bilaterally at the knee, McMurray's negative on the left, McMurray's on the right elicits a small click on the medial meniscus, no tenderness or pain on provocative maneuvers or along the joint line

**GU:** Pap smear obtained and sent for results, urine dipstick negative; smear showed normal vaginal cells with rare clue cells, no hyphae, pseudohyphae, or trichinosis observed. Bimanual exam revealed almond-sized ovaries, a boggy uterus that was enlarged and retroverted. No blood, abnormal discharge or odors noted. External vulvar exam revealed healthy tissue without growths, sores, or ulcerations.

***Osteopathic Structural Exam:***

Pt was examined in the standing, seated, and supine positions. Gait was normal. Standing flexion test was positive on the left. Exaggerated lumbar lordosis was noted. Right shoulder was held in an elevated position, as compared to the left shoulder. Head had a right torsion strain pattern. The occipital condyles were compressed. The OA was extended, rotated right, sidebent left. AA rotated right. C3 was flexed, rotated and sidebent right. C4 was extended, rotated and sidebent left. T1-3 were neutral with flexion preference, rotated right, sidebent left. T4 was extended, rotated and sidebent left. There was marked paraspinal muscle tension at the thoracolumbar junction, extending to the lower thoracic and upper lumbar musculature. T10-L2 were neutral, rotated left, sidebent right. L3 was flexed, rotated and sidebent right. The sacrum

showed left rotation on a left axis. ASIS compression test lateralized to the left and revealed a left superior innominate shear. Pubic compression, as well as tenderness in the suprapubic area was noted. Iliopsoas and hamstring muscles were hypertonic with marked reduction in flexibility. There was a mild preference for internal rotation with posterolateral glide at the right tibia. The right fibular head had a mild posteromedial glide preference. The right and left navicular bones were internally rotated.

**Assessment:**

Be prepared to discuss this at the OMM session. Indicate the primary Medical Diagnosis based upon the international Classification of Diseases (ICD-9). This justifies the Evaluation and Management (E&M) coding portion of the visit. List all secondary, comorbid, and complicating factor diagnoses in order of importance. Itemize somatic dysfunction diagnosis for each body region treated using OMT. This justifies reimbursement for OMT. Be prepared to discuss management of typical comorbid and complicating factors associated with the patient's diagnosis and how management and treatment would be modified with each comorbid and complicating factor.

**Section II: Mini-Lecture/Discussion (approximate time 20–30 minutes)**

**Discussion Questions**

**Teaching Points**

<p>1. Propose an appropriate differential diagnosis / assessment</p>	<p><b>Differential Diagnoses:</b></p> <ol style="list-style-type: none"> <li>1 Primary dysmenorrhea</li> <li>2 Adenomyosis</li> <li>3 Endometriosis</li> <li>4 Pelvic Inflammatory disease</li> <li>5 Fibroids</li> <li>6 Uterine polyps</li> <li>7 Uterine carcinoma</li> <li>8 Ovarian cancer</li> <li>9 Pregnancy</li> <li>10 Ectopic pregnancy</li> <li>11 PCOS</li> </ol>
<p>2. What are the appropriate laboratory tests and their results?</p>	<ol style="list-style-type: none"> <li>1. Get Measure hCG levels</li> <li>2. Get a transvaginal U/S, or MRI in indeterminate cases, to diagnose adenomyosis (important to consider due to prior childbirth)</li> <li>3. Consider evaluating the thyroid as a systemic cause of symptoms</li> <li>4. Evaluate hormone levels of estrogen, progesterone, and androgen</li> </ol>
<p>3. What is your final diagnosis?</p>	<ul style="list-style-type: none"> <li>• <b>Primary Diagnosis:</b> Dysmenorrhea</li> </ul>

	<ul style="list-style-type: none"> <li>• <b>Secondary Diagnosis:</b> Pelvic pain</li> <li>• <b>Somatic dysfunction related to diagnosis:</b> Head, C-T-L-S spine, Pelvis and lower extremities</li> </ul>
<p>4. How do you explain the current structural findings in the context of this case?</p> <ul style="list-style-type: none"> <li>• Are any relevant structural findings missing?</li> <li>• What would you do differently?</li> <li>• Why?</li> </ul>	<ul style="list-style-type: none"> <li>• Parasympathetic output affecting the OA and sacrum</li> <li>• Increased sympathetic output from T10-L2</li> <li>• Increased lordosis affecting type II dysfunctions in the lumbar spine, sacrum, and pelvis</li> <li>• C3 and T3 dysfunctions due to stress carried in muscle tension in the thoracic and cervical regions</li> <li>• Torsion pattern possibly compensatory due to unusual positions sleeping, trying to alleviate pelvic pain or other unknown reason</li> <li>• Internally rotated navicular bones due to body habitus, “fallen arches”</li> </ul> <p>(a)</p> <ul style="list-style-type: none"> <li>• Evaluate for pelvic tenderpoints</li> <li>• Evaluate for Chapman’s reflexes</li> <li>• Evaluate pelvic diaphragm</li> </ul> <p>(b)</p> <ul style="list-style-type: none"> <li>• Mobility and motility testing of the uterus as detailed in Barral Visceral manipulation</li> </ul>
<p>5. What pathophysiology &amp; functional anatomy knowledge is pertinent for diagnosing/treating this patient</p>	<p>A. <b><u>Pathophysiology</u></b>—</p> <ul style="list-style-type: none"> <li>• Physiology of the normal ovulatory menstrual cycle and knowledge of where it may be deranged and causing the patient’s symptoms</li> <li>• Understand ddx with respect to the patient’s age</li> <li>• Implants may or may not be present and may or may not be palpable on exam in considering endometriosis</li> <li>• Consider any possible drug effects from patient’s prescriptions</li> </ul> <p>B. <b><u>Functional Anatomy</u></b>-</p> <ol style="list-style-type: none"> <li>1. Female reproductive system anatomy</li> <li>2. Pelvic bowl anatomy, such as uterus, ovaries, fallopian tubes, cardinal ligaments, round ligaments, uterosacral ligaments, pubovesical ligament, sagittal peritoneal fold, cervix, rectum, uterine arteries, ureters, etc.</li> </ol>
<p>6. What will be your highest yield regions?</p>	<ul style="list-style-type: none"> <li>• Sacrum</li> <li>• OA</li> <li>• Pelvic diaphragm</li> <li>• Uterus</li> </ul> <p>Modifications may be necessary due to the patient’s multiple sclerosis. Exercise likely to be very beneficial. Lymphatic pumps should be avoided if there is any suspicion of ovarian cancer (due to family history and abdominal fullness.)</p>

<p>7. How does previous trauma influence these regions?</p>	<ul style="list-style-type: none"> <li>• If there had been trauma, arthritis, spondylolysis, spondylolisthesis, bulging discs, herniated discs.</li> <li>• Citing childbirth as a trauma, this increases suspicion that the patient could have adenomyosis. Also need to consider adhesions as a potential cause of her symptoms.</li> <li>• Knee arthroscopy and any residual effects or development of new problems due to the procedure, such as arthritis.</li> </ul>
<p>8. Which 1 or 2 of the aspects below has the greatest influence on the patient complaint?</p> <ul style="list-style-type: none"> <li>• Pain</li> <li>• Fluid congestion</li> <li>• Hyper-sympathetic influence</li> <li>• Parasympathetic influence</li> </ul>	<p>6. Parasympathetic influence          7. Fluid congestion          8. Pain          9. Hyper-sympathetic influence</p> <p>--Pain is affected by the patient's multiple sclerosis.          --Sympathetic influence is affected by the patient's metabolic syndrome.          --Treatment options may be affected by the patient's strong faith and what is allowed within her religious structure</p>
<p>9. What are the acute or chronic aspects?</p>	<p><b>Acute:</b> Pain and excessive bleeding during menses, possible anemia, dizziness, headache, and other associated symptoms  <b>Chronic:</b> Obesity and long term affects on musculoskeletal structure and hormone balance  <b>Acute &amp; Chronic:</b> Metabolic syndrome and affects on cardiovascular risk, hormone levels, endocrine function, hypercoagulability, and inflammatory state</p> <ul style="list-style-type: none"> <li>• Multiple sclerosis and pain, function, ability to participate in ADLs</li> <li>• Auto-immune hepatitis and risk of decreased liver function, cirrhosis</li> </ul>
<p>10. Devise an appropriate treatment plan based on musculoskeletal components involved in the patient complaint</p>	<p><b>Goals for osteopathic manipulative management—includes:</b></p> <ul style="list-style-type: none"> <li>• Modify autonomic input</li> <li>• Treat somatic dysfunctions</li> <li>• Alleviate/reduce pain</li> <li>• Decrease congestion</li> </ul> <p>Restore normal motion to visceral structures</p> <p><b>The treatment plan could include:</b></p> <ul style="list-style-type: none"> <li>• Cranial techniques</li> <li>• OA condylar decompression</li> <li>• HVLA to the cervical, thoracic, and lumbar spine. Alternatively, indirect techniques, muscle energy techniques, could be considered.</li> <li>• Muscle energy to sacrum and pelvis.</li> <li>• Articular techniques to the feet</li> <li>• Pelvic diaphragm release.</li> <li>• Pedal pump</li> <li>• Counterstrain to pelvic tender points</li> <li>• Inhibition to Chapman's reflexes</li> <li>• Visceral manipulation of the uterus in order to release adhesions and effect a release</li> </ul>

	<ul style="list-style-type: none"> <li>Exercise prescription</li> </ul> <p>Self-stretching and strengthening exercises to reduce lordosis and development of postural strain</p>
<p>11. What are the dose and frequency considerations?</p>	<ul style="list-style-type: none"> <li>It is important to treat frequently enough to allow functional postural patterns to overtake the longstanding dysfunctional patterns. Increased treatment for pelvic congestion during the times leading up to and during menses would be appropriate. It is important not to overtreat or attempt to restructure too many dysfunctions all at once.</li> <li>Initially consider seeing once every two weeks. As exercise program and manipulation takes effect, decrease to every four weeks then eight weeks. Brief treatments every four weeks targeting pelvic congestion and parasympathetic influence would be appropriate.</li> <li>Consider altering muscle energy techniques during multiple sclerosis flare-ups. Also, consider using balance ligamentous tension, indirect, and facilitated positional techniques during these times, as gentle techniques may be better tolerated.</li> </ul>
<p>12. What are the outpatient, inpatient, and emergency room considerations?</p>	<p>This is an outpatient case. It is important that the patient fully participates in her care and undertakes the exercise and stretching and strengthening regimens recommended to effect long-term change and increase in function.</p>
<p>13. How are you going to talk to your patient about their complaint and your treatment?</p>	<ul style="list-style-type: none"> <li>With compassion and speaking in clear, easily understandable terms.</li> <li>Emphasize the patient's partnership in her health care</li> <li>Emphasize a strong belief in the patient's power to effect change, especially in consideration of the fact that her multiple sclerosis may cause her times of feeling powerless over her body</li> </ul> <p>Address her religious concerns, what role she wants this to play in her interactions with you as her physician, to what level her religion informs her medical decisions, addressing all benefits and risks of the religious influence with respect and validation</p>
<p>14. How will you communicate your findings, diagnosis, and treatment to your preceptor?</p>	<ul style="list-style-type: none"> <li>Clearly, concisely, with emphasis on pertinent positives and negatives from medical, family, and social histories. Considerations for treatment options, management goals, and long-term outcomes/prognosis.</li> </ul> <p>Any questions or concerns I have will also be addressed with my attending at that time</p>

<p>15. What coding and billing information for evaluation and management and procedural services will you generate?</p>	<ul style="list-style-type: none"> <li>• The diagnosis of somatic dysfunction in the assessment justifies the use of OMT</li> <li>• Somatic dysfunction diagnosis must be present in order to bill for the OMT that was performed. OMT is considered a procedure.</li> <li>• Documentation must reflect that the decision to perform OMT was made on that visit based on the physical findings and OMT was used for somatic dysfunction(s) identified</li> <li>• The procedure (OMT) and the E/M visit may both be billed with the same diagnosis code and during the same encounter if the decision to perform the procedure was made at the time of the encounter. Modifier -25 is used with the E/M code</li> </ul> <p><u>You must have a non-somatic dysfunction diagnosis included for this case</u></p> <p><b>E/M-</b> Office Visit- New patient, Expanded- 99202  <b>Diagnosis-</b> Painful Menses- 625.3  <b>SD-</b> Head- 739.0, Cervical- 739.1, Thoracic- 739.2, Lumbar- 739.3, Sacrum- 739.4, Hip/Pelvis- 739.5, LE- 739.6, Abdomen- 739.9  <b>Procedure codes-</b> Manipulation 7-8 areas- 98928</p>
<p>16. How would you record your encounter and OMT on your patient care logs?</p> <p>(<u>example is from New Innovations Research Management Suite @</u> )</p>	<p>Enter patient data, diagnosis date, and any special comments.</p> <p>- Indicate under "Procedure Logger" and "View Procedures Logs" your osteopathic manipulative treatment and check the following under "<u>Osteopathic Manipulative Treatment</u>" field</p> <p><input checked="" type="checkbox"/> Yes  <input checked="" type="checkbox"/> Biomechanical Factors  <input checked="" type="checkbox"/> Sympathetic nervous system responses  <input checked="" type="checkbox"/> Parasympathetic nervous system responses\  <input checked="" type="checkbox"/> Lymphatic and venous fluid congestion  <input type="checkbox"/> Pain Management  <input checked="" type="checkbox"/> Psychosocial factors, Stress Management  <input type="checkbox"/> No</p>

<p>17. What questions would you formulate to evaluate this person's problems using an Evidence-Based Medicine approach? List the best evidence from the osteopathic literature and the general medical and scientific literature.</p> <p>Barral, Jean-Pierre. Mercier, Pierre. <u>Visceral Manipulation</u>. 1988. Eastland Press, Incorporated, PO Box 12689, Seattle WA. Ch. 10.</p> <p>Tettambel, Melicien A. <u>Foundations for Osteopathic Medicine</u>. 1997. Williams &amp; Wilkins, 351 Camden Street, Baltimore, MD 21201. Ch. 30.</p> <p>Seller, Robert H. <u>Differential Diagnosis of Common Complaints, 3<sup>rd</sup> Ed.</u> 1996. WB Saunders Company, The Curtis Center, Independence Square West, Philadelphia, PA 19106. Ch 20-21.</p> <p>Sinaki M, Merritt J, Stillwell GK. Tension myalgia of the pelvic floor. <i>Mayo Clinic Proc.</i> 1977; 52; 717-722,</p> <p>Travell J, Simons D. <i>Myofascial Pain and Dysfunction: The Trigger Point Manual, Volume 2: The Lower Extremities</i>. Baltimore, MD: Williams &amp; Wilkins, 1992.</p> <p>Boesler D, Warner M, Alpers A, Finnerty EP, Kilmore MA. Efficacy of high velocity low amplitude manipulative technique in subjects with low back pain during menstrual cramping. <i>JAOA</i>. 1993; 93:203-214</p>
--

Hitchcock ME. The manipulative approach to the management of primary dysmenorrhea. *JAOA*. 1976; 75: 109-118.  
 Chapman JD. Progress in scientifically proving the benefits of OMT in treating symptoms of dysmenorrhea. *JAOA*. 1993; 93:196. Editorial

**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.

**The Process:**

1. Formulate a specific three part clinical question:

- What is the specific problem for this patient or patient population
- What intervention is sought?
- What is the desired outcome?

2. Search for the best evidence:

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:

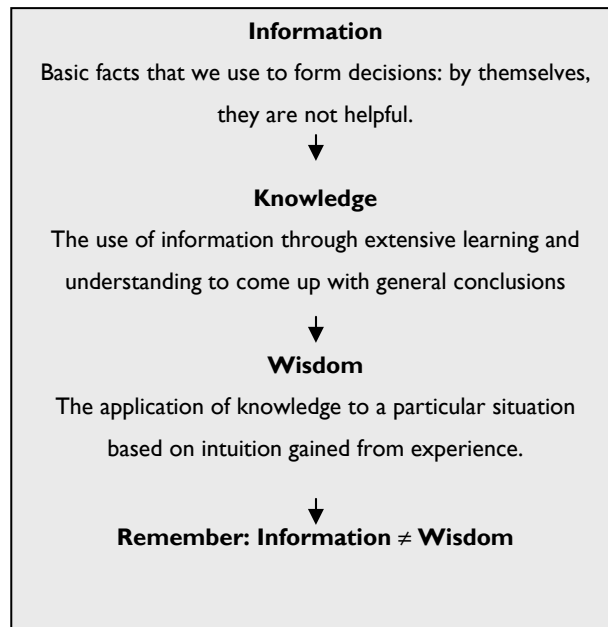
- OstMed (<https://ostemed.hsc.unt.edu/ostmed/>)
- AT Still Library Online Text (Portal)

Other literature bases (systems or synopsis engines):

- MD Consult (through ATSU Portal)
- Poems ([www.info poems.com](http://www.info poems.com))
- Up to Date ([www.uptodate.com](http://www.uptodate.com))
- Family Practice Inquiry Network ([www.fpin.org](http://www.fpin.org))
- PubMed Linkout (Portal)
- Ovid
- Google Scholar

3. Critically appraise the evidence. The role of the physician is to bring superior knowledge and clinical wisdom to the patient problems

4. Apply the evidence to your patient. Evidence-Based Practice integrates individual clinical expertise with the best available external clinical evidence from systematic research, always bearing in mind “The relationship between the Osteopath and the patient is the heart of Osteopathy” (Podmore, 2001)



**Based on Box 20:** was there any evidence that OMT would be contra-indicated in this patient? Would the information retrieved modify the course of action for this patient as compared to Box 14? No. All was within best practice per the evidence available.

**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:
  - HVLA to cervical spine
  - Supine HVLA to thoracic spine
  - Lateral recumbent HVLA to lumbar spine
  - Supine muscle energy to innominate
    - also demonstrate HVLA to innominate
  - Combined forces muscle energy to sacrum
    - also demonstrate supine indirect technique for same rotation around same axis
    - consider demonstrating Still technique for the sacrum
  - Pelvic diaphragm release
  - Pedal pump
  - Counterstrain to pelvic tender points
  - Visceral manipulation
    - mobilize the uterus in translatory fashion, rhythmically, until a release is felt (usually 10 cycles) See Barral, Visceral Manipulation, pg. 249
4. Participants should practice the techniques on each other
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**