

## ***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:*** A 36-year-old black female presents with a three-day history of lower abdominal pain, urgency, frequency and malaise. She denies any nausea or vomiting.

***Patient History:*** She has been running a fever (99-101) intermittently over the past three days. She describes her abdominal pain as a cramping pressure in the suprapubic region, which at times becomes sharp. Her pain was initially a dull fullness. She reports that she has had urinary frequency, oliguria, and hematuria. She also reports that she has been drinking cranberry juice over the past 2 days and her pain has gotten worse. She has been treated for several urinary tract infections, but treatments don't always eliminate her pain.

***Family History:*** Mother has diabetes and hypertension; father has history of IBS, and a sister with hypertension and previous MI.

***Social History:*** Married with three children, elementary school teacher. She denies any alcohol, tobacco, or recreational drug use.

***Trauma History:***

***Allergies:*** NKDA

***Lab Tests & Results:***

***Meds:*** Prilosec OTC (omeprazole) 20 mg one BID, Lopressor (metoprolol) 50mg BID, ASA 81 mg daily, and Multivitamin daily

***PMH:*** Hypertension, recurrent hematuria, GERD, and dyspareunia

***PSH:*** tonsillectomy, adenoidectomy, Cesarean section X 2

### **Review of Systems**

***Constitutional:*** fatigued, fevers, chills

***Skin:***

***Blood/Lymph/ Endocrine:***

***ENT:*** tension HA, no oral lesions or difficulty swallowing

***Eyes:*** wears glasses for vision correction

***Cardiovascular:*** HTN, no exertional dyspnea, no murmurs or congenital defects

***Pulmonary:*** no asthma, pneumonia, bronchitis, or shortness of breath

***GI:*** history of heartburn and reflux, no diarrhea/constipation, no hematochezia or melena

***GU:*** Patient has urinary frequency, urgency, and hematuria. She often experiences suprapubic tenderness and pain.

Menarche age 12, periods are regular but painful. She had one complicated vaginal delivery requiring the use of forceps and an episiotomy. She has had 2 Cesarean sections.

**Musculoskeletal:**

**Neurologic:** no seizures, history of syncopal episodes, no paralysis

**Psychiatric:**

**Physical Exam**

**Vitals:** B/P 120/80 P 68 R18 T98.6F Wt. 205 Ht 5'10" BMI 29

**General:** fatigued, fevers, chills

**Head:** normocephalic

**Eyes:** EOMI, PERRLA

**ENT:** no thyromegaly, no carotid bruits

**Chest Wall:**

**CV:** RRR without murmur, radial, dorsalis pedis, and posterior tibial pulses 2+

**Respiratory:** LCTA, respiratory rate regular without the use of accessory muscles

**Diaphragm:**

**GI:** soft, bowel sound present in all four quadrants,, suprapubic tenderness, Lloyd's sign negative bilaterally

**Rectal:** normal sphincter tone, Hemoccult - negative

**GU:** External genitalia appears normal without lesions, pelvic exam demonstrates tenderness upon palpation of the vaginal introitus

**Musculoskeletal:**

**Neurologic:** CNII-XII intact, DTR 2/4 bilaterally upper and lower extremities, alert and oriented to person, place, and time

**Lymphatic:** history of hypochromic, microcytic anemia and blood transfusions without reactions

**OMM Focused Structural Exam**

Patient examined in the seated, right lateral recumbent and supine positions. The patient was found to have cervical and lumbar paraspinal musculature tightness. Muscle strength was 5/5 bilaterally for the upper and lower extremities. Gait was normal. The OA was extended rotated right and sidebent left. C3-5 were extended, rotated and sidebent right. T9-12 was neutral, rotated right and sidebent left. L1-2 was extended, rotated and sidebent left. L5 was rotated right and sidebent left. The sacrum was rotated left on a left oblique axis. The right innominate was anteriorly rotated.

**Assessment:**

- 1) Acute urinary tract infection
- 2) interstitial cystitis
- 3) hypertension
- 4) Gastroesophageal reflux disease
- 5) abdominal pain
- 6) somatic dysfunction of the head, cervicals, thoracics, lumbar, sacrum, and pelvis.

**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><b>Differential Diagnoses:</b> Acute urinary tract infection, interstitial cystitis, cystitis, pyelonephritis, bladder cancer, uterine fibroids, ovarian cysts, tubal pregnancy, adhesions, pelvic inflammatory disease, vaginosis, vaginal candidiasis, endometriosis, ovarian cancer, renal carcinoma, sarcoidosis, herniated disc, and spondylolisthesis</p>
<p>2. What is your final diagnosis?</p>	<p><b>Primary Diagnosis:</b> Acute urinary tract infection 595.0 (Acute cystitis) <b>Secondary Diagnosis:</b> Interstitial cystitis 595.1 <b>Somatic dysfunction related to diagnosis: 739.0-5</b> Head, Cervical, Cervical, Lumbar, Sacrum/Sacroiliac, and Hip/Pelvis</p>
<p>3. 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>• Visceral somatic changes both parasympathetic and sympathetic involvement</li> <li>• Visceral somatic changes of GI tract, kidneys, ureters, and bladder</li> <li>• Upper thoracic changes due to GERD</li> </ul>
<p>4. What pathophysiology &amp; functional anatomy knowledge is pertinent for diagnosing/treating this patient</p>	<p>Interstitial cystitis: increased afferent and efferent neuronal activity, excess inflammatory mediators, increases epithelial permeability. While the exact mechanism is unknown, one theory is that IC is caused by a defect in the glycosaminoglycan component of the mucin layer that covers and protects the bladder urothelium. Irritating substances in the urine may leak through the urothelium resulting in inflammation, injury, mast cell degranulation and sensory nerve depolarizations.</p>
<p>5. What will be your highest yield regions?</p>	<p>OA, thoracolumbar junction, pelvis and sacrum</p>
<p>6. How does previous trauma influence these regions?</p>	<p>Stress may result in changes of the bladder pH resulting in infections. Previous episiotomy may have resulted in fistula allowing for recurrent UTI or could have changed the anatomy of the sphincter causing either urinary retention or leakage allowing for the passage of bacteria</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"> <li>• Pain</li> <li>• Fluid congestion</li> <li>• Hyper-sympathetic influence</li> <li>• Parasympathetic influence</li> </ul>	<p>Pain and Parasympathetic influence. Parasympathetic homeostasis can allow normalization of glomerular filtration rates, increased urinary volume, and decrease spasm of proximal ureters.</p>

8. What are the acute or chronic aspects?	<b>Acute:</b> current pain, urinary frequency and urgency <b>Chronic:</b> keep hypertension under control to avoid cardiac hypertrophy
9. Devise an appropriate treatment plan based on musculoskeletal components involved in the patient complaint	<p><b>Goals for osteopathic manipulative management—includes:</b></p> <ul style="list-style-type: none"> <li>• Treat somatic dysfunctions of OA to release the OA allowing normalization of glomerular filtration rates, increased urinary volume, and decrease spasm of proximal ureters.</li> <li>• Treat somatic dysfunctions of the thoracolumbar region restore normal sympathetic tone resulting in decreased urinary frequency and urgency.</li> <li>• Treat somatic dysfunctions of the lumbar, pelvis and sacrum.</li> </ul> <p><b>The treatment plan could include:</b></p> <p>OA decompression, ME to thoracic and lumbar dysfunctions Sacral gapping Release of renal fascia</p>
10. How soon would you see the patient for OMM follow-up?	Weekly treatments for a couple of weeks, adding stretches for thoracic dysfunction (thoracic extension exercises to be done by the patient at home twice daily).
11. What are the outpatient, inpatient, and emergency room considerations?	<p><u>Outpatient:</u> weekly treatment, daily stretches, medication and diet considerations.</p> <p><u>Inpatient:</u> daily treatments until up and moving then back off, encourage exercise.</p> <p><u>Emergency Room:</u> relieving pain- OA decompression, pelvic counterstrain.</p>
12. How are you going to talk to your patient about their complaint and your treatment?	In layman's terms with compassion, clearly explaining diagnostic procedures necessary and their risks. Treatment options, benefits, and risks will be discussed with the patient, along with EBM data to help decide best option, with likely best outcome for the patient. Importance of further work up to determine cause of the UTI lifestyle style and dietary changes to prevent future infections and the importance of adhering to these measures will be discussed. Describe possible complications due to recurrent infections
13. How will you communicate your findings, diagnosis, and rationale for OMM treatment to your preceptor?	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. Address any questions at this time.
14. What coding and billing information for evaluation and management and procedural services will you generate?  (See Procedure Services Chart below)	<p><b>E/M-</b> 99203-25 Detailed exam (New Patient) (-25 OMT modifier)</p> <p><b>Diagnosis-</b> Acute urinary tract infection 595.0 (Acute cystitis), Interstitial cystitis 595.1, 739.0 Head, 739.1, Cervical 739.2, Cervical 739.3, Lumbar, 739.4 Sacrum/Sacroiliac and 739.5 Hip/Pelvis</p> <p><b>Procedure codes-</b> 98927 (Manipulation 5-6 areas)</p>

15. How would you record your encounter and OMT on your patient care logs?	Enter patient data, diagnosis date, and any special comments.
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<b>Procedure Services: Osteopathic Manipulative Treatment</b>							
		<b>Code</b>		<b>Description</b>			
		98925		Manipulation, 1-2 areas			
		98926		Manipulation, 3-4 areas			
X		98927		Manipulation, 5-6 areas			
		98928		Manipulation, 7-8 areas			
		98929		Manipulation, 9-10 areas			
<b>CPT Diagnostic Codes: Rank in order of Importance</b>							
<b>Diagnosis</b>			<b>Somatic Dysfunction</b>				
Code	Description		Code	Description		Code	Description
		X	739.0	Head	X	739.5	Hip/Pelvis
		X	739.1	Cervical		739.6	Lower Extremity
		X	739.2	Thoracic		739.7	Upper Extremity
		X	739.3	Lumbar		739.8	Rib
		X	739.4	Sacrum/Sacroiliac		739.9	Abdomen

**16. What is the Evidence Base?**

www.niddk.nih.gov/health/urológ/pubs/cystitis/cystitis.htm, Graham’s OMM Guidelines for improving genitourinary function in patients presenting with chronic urinary tract infection, prostatitis, urinary calculi, urinary incontinence and retention, Philosophy and Principles of Patient Care: viscerosomatic reflexes from the urinary tract.

**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](http://www.info poems.com))
- Family Practice Inquiry Network ([www.fpin.org](http://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:
  - OA decompression,
  - ME to thoracic and lumbar dysfunctions
  - Sacral gapping
  - Release of renal fascia
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**