

## **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:** Abdominal pain and constipation

**Patient History:** A 28-year-old white male presents to the Emergency Department and then admitted to the Progressive Care Unit with abdominal pain. Symptoms worsened two days prior to presentation. The abdominal pain is mostly diffuse, but seems to be more intense in the right lower quadrant. The pain is rated 8 on a scale of 10. He has had associated nausea, vomiting, diarrhea, and shortness of breath. The patient has had this type of pain before chronically, but never this severe. Also complains of dull upper lumbar pain.

**Trauma History:** Cervical spine fracture in 1998, with associated Phrenic nerve damage and right hemi-diaphragm paralysis.

**Family History:** Paternal history of hypertension. Maternal history unknown.

**Social History:** A minister by trade with a local small Christian congregation. He was orphaned at three years old and grew up in foster homes. He lives in a 30-year-old home with his pregnant wife and daughter. Patient is unable to afford health insurance for himself, and it is not provided by his employer. Admits past tobacco use, but quit 12 years ago. He denies alcohol, caffeine, and illicit drug use.

**Allergies:** Sulfa

**Meds:** None

**PMH:** Depression and anxiety, requiring medication in the past.

**PSH:** Patch graft on aorta following motor vehicle collision trauma in 1999.

### **Review of Systems**

**Constitutional:** Admits weakness and fatigue. Denies recent unintended change in weight, and night sweats.

**Skin:** Denies new moles, bumps, bruises, and rashes.

**Blood/Lymph/Endocrine:**

**Cardiovascular:** Dyspnea with exertion, denies chest pain, palpitations, and claudication.

**Pulmonary:** Admits shortness of breath. Denies cough, wheezing, asthma, and pneumonia.

**HEENT:** Denies ear pain, and sore throat. Denies changes in vision or hearing, eye pain,

**GI:** As above. Recently twice had black tarry stools and bright red blood in stools. Admits anorexia, abdominal pain, nausea, vomiting, and diarrhea.

**GU:** Denies dysuria, hematuria, frequency, urgency, incontinence.

**Musculoskeletal:** Admits some knee pain and a history of occasional low back pain with recent dull pain in upper lumbar spine.

**Lab Tests and Results:**

1. Stool Guaiac: positive
2. Decreased hemoglobin and hematocrit from chronic blood loss, effect of inflammation on bone marrow, and malabsorption of vitamin B<sub>12</sub>
3. Hypokalemia, hypomagnesemia, hypocalcemia, and low albumin in patients with chronic diarrhea
4. Vitamin B<sub>12</sub> and folate deficiency
5. Elevated erythrocyte sedimentation rate (ESR)

Endoscopic features include asymmetric and discontinuous disease (skip lesions), deep longitudinal fissures, cobblestone appearance, and presence of strictures on biopsy. Crypt distortion and inflammation are present. (Ferri: Practical Guide to the Care of the Medical Patient, 7th ed.)

**Neurologic:** Denies paresthesias, sensory deficits, and seizures.

**Psychiatric:** Admits to a history of anxiety and depression.

**Physical Exam**

**Vitals:** T 98.6 R 20 BP 108/70 P 90 Wt 200 lbs.

Ht 5’10” BMI 28.7

**General:** 28-year-old male appearing appropriate for stated age, in mild distress, and fatigued.

**Skin:** Pallor is present

**Chest Wall:**

**CV:** RRR without murmur, gallops, or rubs.

**Diaphragm:**

**HEENT:** Head is normocephalic, no masses or lacerations noted. EOMI. PERRLA. TMs clear bilaterally. Nasal mucous membrane is moist and pink. Teeth present in good repair.

Pharynx unremarkable and without post-nasal drainage.

**GI:** Abdomen is flat. Bowel sounds present x 4. Diffuse tenderness to palpation with greatest tenderness present in the right lower quadrant. No masses, organomegaly, or free fluid noted. Murphy’s sign is absent. Lloyd’s sign negative. No tenderness to palpation over McBurney’s point.

**Rectal:** Sphincter tone is good. No fistulas, hemorrhoids, masses, or areas of tenderness noted. The prostate is firm and not enlarged. Hemoccult is positive.

**GU:** Normal male genitalia. The penis is circumcised without lesions or discharge. Testes descended bilaterally without tenderness or masses. No hernias palpated.

**Musculoskeletal:** Muscle strength 5/5 bilaterally in all extremities.

**OMM Focused Structural Exam**

- Acute tissue texture changes consisting of hot erythematous skin, muscle spasm, and edematous tissues are present in the cervical, thoracic, lumbar, and sacral regions.
- C3-3 ESrRr with marked restriction in motion.
- OA FRISr
- T10-12 NSrRI. L1 FSIRI. L2-4 NSrRI.
- Sacrum right unilateral sacral flexion. Right posteriorly rotated innominate.
- Tissue texture changes at the superior and inferior mesenteric ganglia area.
- The root of the mesentery and the mesentery to the ascending colon is tight.
- Chapman’s points present anterior iliotibial band R>L and intercostal spaces 9 and 10 bilaterally

**Lymphatic:**

- Thoracic inlet rotated and sidebent right and flexed.
- Abdominal hemi-diaphragm restricted bilaterally, with right rotation preference. Right hemi-diaphragm has significantly less motion than the left.

**Neurologic:** Alert and oriented x3. No sensory deficits. CN II-XII grossly intact. DTR +2/4 bilaterally in all extremities.

**Respiratory:** The chest is asymmetrical. Lungs CTA bilaterally. No wheezing. Respirations are slightly labored, but regular. Rate is rhythmical without the use of accessory muscles. Abdominal diaphragmatic excursion is markedly reduced on the right.

**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></p> <ul style="list-style-type: none"> <li>• Crohn’s Colitis</li> <li>• Ulcerative Colitis</li> <li>• Diverticulitis</li> <li>• Acute Appendicitis</li> <li>• Infectious Gastroenteritis (Tuberculosis, <i>Giardia lamblia</i>, <i>Entamoeba histolytica</i>, <i>Salmonella</i>, <i>Campylobacter</i>, <i>Yersinia</i>, <i>Clostridium difficile</i>)</li> <li>• Irritable Bowel Syndrome</li> <li>• Lactose intolerance</li> <li>• Adenocarcinoma of the colon</li> <li>• Mesenteric adenitis</li> <li>• Lower lobe pneumonia</li> <li>• Urinary Tract Infection</li> </ul>
<p>2. What is your final diagnosis?</p>	<ul style="list-style-type: none"> <li>• <b>Primary Diagnosis:</b> Crohn’s Disease of small intestine and colon (<i>confirmed with bowel biopsy</i>)</li> <li>• <b>Secondary Diagnosis:</b></li> <li>• <b>Somatic dysfunction related to diagnosis:</b> Abdomen, Thoracic, Lumbar, Sacrum, Pelvis, Cervical</li> </ul>
<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>• Most findings are potentially participants in viscerosomatic or somatovisceral reflexes.</li> <li>• Viscero-somatic: referring back to the lower thoracics and upper lumbar; vagus and sacral splanchnics</li> <li>• Postural strain could possibly contribute to the clinical scenario.</li> <li>• Compensations from the 1998 MVA and from the hemidiaphragm paralysis – potential affect on lymphatic drainage</li> </ul>
<p>4. What pathophysiology &amp; functional anatomy knowledge is pertinent for diagnosing/treating this patient</p>	<p>A. <b>Pathophysiology:</b> Crohn’s disease is currently considered to be idiopathic, but considered multifactorial in origin including:</p> <ol style="list-style-type: none"> <li>1. Exaggerated immune response, T cell activation, Crohn’s disease is specifically linked to Th1 type immune response (cell mediated immune response), increased cytokines and up-regulation of</li> </ol>

	<p>macrophages [Lymphatic clearing afforded by OMT and appropriate home exercises could assist this.]</p> <ol style="list-style-type: none"> <li>2. Defects in epithelial barrier function</li> <li>3. Genetic susceptibility</li> <li>4. Environmental trigger—especially microbial flora [increased sympathetic tone &amp; lymph stasis=&gt; relative hypoxia=&gt; promote microbial flora]</li> <li>5. Stress related to finances, lack of insurance, young child, and pregnant wife may contribute to changes in autonomic function</li> </ol> <p><b>Functional Anatomy:</b> Viscerosomatic and somatovisceral reflexes. Co-morbid factors including past cervical spine fracture, phrenic nerve damage, and past surgical interventions might augment or mask somatic dysfunction findings traditionally found with GI dysfunction.</p>
<p>5. What will be your highest yield regions?</p>	<p>Sacrum, thoraco-lumbar junction, OA, mesenteric ganglion, rib-raising</p>
<p>6. How does previous trauma influence these regions?</p>	<ul style="list-style-type: none"> <li>• Previous trauma contributes to musculoskeletal dysfunction, which can predispose the individual for somatic dysfunction and/or viscerosomatic and somatovisceral reflexes.</li> </ul>

<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>	<ul style="list-style-type: none"> <li>• Sympathetic influence</li> <li>• Parasympathetic influence</li> </ul>
<p>8. What are the acute or chronic aspects?</p>	<p><b>Acute:</b> Acute somatic dysfunction. <b>Chronic:</b> Psychological disturbance, cervical fracture, and phrenic nerve damage. Compensatory somatic dysfunction from the above.</p>
<p>9. 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>• Normalize sympathetic/parasympathetic tone</li> <li>• Improve lymphatic drainage of congested tissues</li> <li>• Address acute somatic dysfunction 1<sup>st</sup>, then underlying chronic somatic dysfunction that may be setting up a subtler level of facilitation</li> <li>• Decrease Pain</li> </ul> <p><b>The treatment plan could include:</b></p> <ul style="list-style-type: none"> <li>• Sacral techniques (parasympathetic tone): HVLA, ME, sacral rocking</li> <li>• Thoracic techniques: HVLA, ME</li> <li>• Lumbar techniques: HVLA, ME</li> <li>• Suboccipital Release (parasympathetic up to splenic flexure)</li> <li>• Rib raising, especially lower half of rib cage</li> <li>• Mesenteric lift</li> <li>• Inferior mesenteric ganglion inhibition</li> <li>• Diaphragm release</li> <li>• Pelvic diaphragm release</li> <li>• Psoas release (Counterstrain &amp; indirect fascial release for acute;</li> </ul>

	<p>muscle energy for chronic aspects</p> <ul style="list-style-type: none"> <li>Lymphatic pump technique: Cysterna chili &amp; mesenteries</li> </ul>
10. How soon would you see the patient for OMM follow-up?	<ul style="list-style-type: none"> <li>In-Hospital: up to bid (3-5 minutes each visit)</li> <li>Follow-up: within 2 weeks</li> </ul>
11. What are the outpatient, inpatient, and emergency room considerations?	<ul style="list-style-type: none"> <li>This case is best managed initially in an inpatient setting until the patient is stabilized. Then, outpatient follow-up is advisable. Inflammatory Bowel Disease is a chronic condition that requires on-going care, quite possibly specialized medical care..</li> </ul>
12. How are you going to talk to your patient about their complaint and your treatment?	<p>With compassion and empathy historical information will be solicited. An explanation of short term goals and specific pharmacologic interventions as well as fluid therapy will be discussed. An explanation of the overall treatment goals will be described and, with the understanding that the long term goals may take time to obtain, specific treatments will begin with the current session with the aim of reducing pain, normalizing bowel function, and supporting overall well-being. Most patients are not familiar with the interaction of the musculoskeletal system. Explain how treatment can help edema and the nerves going to the bowel.</p>

13. How will you communicate your findings, diagnosis, and rationale for OMM treatment to your preceptor?	<ul style="list-style-type: none"> <li>Describe primary diagnoses. Describe goals for current visit including specific treatment choices and desired outcomes- reducing fluid congestion and sympathetic stimulus, increasing parasympathetic stimulation and fluid drainage for the gut. If preceptor not familiar with technique, offer to demonstrate to show simple gentle nature. Describe long-term management goals, initial steps to obtaining the goals, and desired outcome. How to address social issues of the working uninsured or underinsured.</li> </ul>
14. What coding and billing information for evaluation and management and procedural services will you generate?	<p><b>E/M- Diagnosis- Procedure codes-</b></p> <p>99252-25 Expanded Inpatient Consult plus OMT procedure: 98927 (5-6 areas treated) [could be 98928 if patient tolerated treatment to all areas noted; more likely in the outpatient setting] Or 99213-25 plus OMT procedure 98927 (5-6 areas treated) [could be 98928 if patient tolerated treatment to all areas noted.] -25 is required in order to receive reimbursement for the E/M component</p> <p>In-hospital after the initial consult an E/M code will probably not be reimbursed for OMT evaluation. The insurer is already paying the primary physician and most decline to pay a second E/M. The procedure, OMT, can still be billed each day with appropriate documentation in the form of a SOAP note specifying dysfunctions, their regional location and the type of treatment used as part of the SOAP note.</p>
15. How would you record your encounter and OMT on your patient care logs?	<p>Enter patient data, diagnosis date, and any special comments.</p>

Could be any of these three, depending on patient tolerance at the time of service

Procedure Services: Osteopathic Manipulative Treatment							
Code		Description					
	98925	Manipulation, 1-2 areas					
X	98926	Manipulation, 3-4 areas					
X	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
			739.0	Head		739.5	Hip/Pelvis
		X	739.1	Cervical	X	739.6	Lower Extremity
		X	739.2	Thoracic		739.7	Upper Extremity
		X	739.3	Lumbar	X	739.8	Rib
		X	739.4	Sacrum/Sacroiliac	X	739.9	Abdomen

**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:
  - Use Graham book for initial beginner interventions.
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
  - d.
6. **Documentation**

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

**Section IV: Final Wrap-up and Questions/Answers - Conventional treatment considerations  
(How would OMT facilitate patient response to these interventions?):**

1. Nutritional supplementation is needed in patients with advanced disease. Total parenteral nutrition (TPN) may be necessary in selected patients.
2. If diarrhea is prominent, increased dietary fiber and lowering of fat in the diet are sometimes helpful. Avoid oral feedings during acute exacerbation to decrease colonic activity: a low-roughage diet may be helpful in cases of early relapse.
3. Psychotherapy is useful for situational adjustment crises. A trusting and mutually understanding relationship and referral to self-help groups are very important because of the chronicity of the disease and the relatively young age of the patients.
4. Aminosalicylates are useful for mild-to-moderate disease. Sulfasalazine is the oldest, least expensive, but also least tolerated of these compounds. The oral salicylate mesalamine (Asacol, Rowasa) is as effective as sulfasalazine and better tolerated but more expensive; it may be useful in patients allergic to the sulfa moiety of sulfasalazine molecule. Individuals with sulfa allergies should avoid sulfasalazine. Folate supplementation is recommended because sulfasalazine inhibits folate absorption.
5. Corticosteroids have been the mainstay for treating moderate to severe active Crohn's disease. Prednisone 40 to 60 mg/day is useful for acute exacerbation. Steroids are usually tapered over approximately 2 to 3 months. Some patients require a low dose for a prolonged period of maintenance.
6. Steroid analogues are locally active corticosteroids that target specific areas of inflammation in the gastrointestinal tract. Budesonide (Entocort EC) is available as a controlled-release formulation and is approved for mild to moderate active Crohn's disease involving the ileum and/or ascending colon. The adult dose is 9 mg qd for a maximum of 8 weeks.
7. Immunosuppressants such as azathioprine (Imuran) 150 mg/day and 6-MP, methotrexate, or

cyclosporine can be used for severe, progressive disease. In patients with Crohn's disease who enter remission after treatment with methotrexate, a low dose of methotrexate maintains remission.

8. Metronidazole (Flagyl) 500 mg qid is useful for colonic fistulas and for treatment of mild to moderate active Crohn's disease. Ciprofloxacin 1 g qd has also been found effective in decreasing disease activity.
9. Infliximab (Remicade), a chimeric monoclonal antibody targeting tumor necrosis factor- $\alpha$ , is effective in the treatment of enterocutaneous fistulas.  
This medication can induce clinical improvement in 80% of patients with Crohn's disease refractory to other agents. Its mechanism of action is incompletely understood. It is very costly. A PPD test should be done before using this medication, as its use can be responsible for reactivating tuberculosis.
10. Hydrocortisone (Cortenema) enema bid or tid is useful for proctitis.
11. Most patients who have anemia associated with Crohn's disease respond to iron supplementation. Erythropoietin is useful in patients with anemia refractory to treatment with iron and vitamins.
12. CBC, liver tests, and vitamin B<sub>12</sub> levels monitored at least yearly
13. Surgical referral is needed for complications such as abscess formation, obstruction, fistulas, toxic megacolon, refractory disease, or severe hemorrhage. A conservative surgical approach is necessary because surgery is not curative. Multiple surgeries may also result in short bowel syndrome.

(Ferri: Practical Guide to the Care of the Medical Patient, 7th ed.)