

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 70 year old male presents with severe cough pain; thinks he has pneumonia.

Patient History: Patient presented to the office complaining of a cough of 1 week. X-rays revealed a left lower lobe pneumonia. The pneumonia progressed into involvement of the entire right lower lobe with mild atelectasis on x-ray. Sputum cultures grew *streptococcus pneumoniae* and he was started on Zithromax (azithromycin).

Family History: Sister died with Alzheimer age 61. Two brothers died of COPD.

Social History: Never smoked, retired army sergeant

Trauma History:

Allergies:

Lab Tests & Results: PSA: 2.1

Meds:

PMH: Mild COPD, mild BPH

PSH: None

Review of Systems

Constitutional:

Skin:

Blood/Lymph/ Endocrine:

ENT:

Eyes: Denies vision changes

Cardiovascular: Denies irregular heart beats, chest pain

Pulmonary: Pain with coughing, mild production.

GI: Denies constipation, diarrhea

GU: Has some hesitancy and dribbling with urination.

Physical Exam

Vitals: Temp. 100.4F, BP 120/84, Resp. 24, P 100,
pulse ox 88% on ventimask

General:

Head:

Eyes:

ENT:

Chest Wall:

CV: Regular rate and rhythm, no murmur; Peripheral pulses
+2/4 throughout

Respiratory: Decreased breath sounds left base, rhonchi
through left mid-lung fields. Moderate crackles right
base, no wheezes

Diaphragm: ineffective cough.

GI: Abdomen: Soft, non-tender, bowel sounds positive;
Rectal: No masses,

GU: prostate enlarged without identifiable masses

Musculoskeletal:

Neurologic:

Lymphatic: extremities no edema

OMM Focused Structural Exam

Cranium: Right condylar compression, right occipitomastoid restricted.

Cervical: C2 ES_RR_R, C4,5 R_LS_LE, tight paraspinal muscles. Scalenes & SCM tight Mild increased kyphosis C7-T8 with mild, generalized decreased range of motion. T5 non-neutral FRrSr. T2 - 4 flexed.

Ribs: Mildly reduced compliance. The excursion of the ribs to inhalation was limited, but symmetrical. Right anterior ribs 4-6 prefer inhalation.

Breathing pattern: The sternomanubrial junction was restricted with reduced A/P excursion of the thorax. There was reduced excursion of the diaphragm, slightly greater on the left. The diaphragm had a weak contraction during inhalation. There were no intercostals retractions.

Lumbar: Flattening T10-L2 with bilateral paravertebral spasm greater on the left. L5 ESrRr

Sacrum: Right sacroiliac compressed with sacrum in position of right unilateral flexion.

Pelvis: Right hip internally rotated with increases capsular tension, right ilium rotated anteriorly.

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> <ol style="list-style-type: none"> 1. COPD 2. Pneumonia 3. CHF 4. Neoplasm 5. Pulmonary Embolism
<p>2. What is your final diagnosis?</p>	<ul style="list-style-type: none"> • Primary Diagnosis: Pneumonia • Secondary Diagnosis: COPD, osteoporosis, BPH • Somatic dysfunction related to diagnosis: Rib, thoracic, cervical, lumbar, sacral and pelvic regions

<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>COPD can result in increased AP diameter of the chest cage. Use of accessory muscles for respiration. Air trapping due to loss of alveolar surface area increases and chronic bronchitis is a comorbid concomitant with the atelectasis.</p>
<p>4. What pathophysiology & functional anatomy knowledge is pertinent for diagnosing/treating this patient</p>	<p>A. Pathophysiology— Understand principles of immune modulation and immune restoration (host component). Explore how bacterial products in the airway can cause alveoli-capillary crosstalk, leading to inflammation, and other potential causative agents. Understand the vascular and neural components of the disease process. Importance of fluid stasis in facilitating the disease process.</p> <p>B. Functional Anatomy- Anatomy of the airways and lungs with vascular and neural components. Understand pathways of lymphatic drainage and the effect of rib cage dynamics on respiration and circulation. Lymphatics drain back to the hila.</p>
<p>5. What will be your highest yield regions?</p>	<p>Rib cage, thoracic and diaphragm somatic dysfunctions</p>
<p>6. How does previous trauma influence these regions?</p>	<p>Previous trauma contributes to musculoskeletal dysfunction, which can predispose the individual for somatic dysfunction and/or viscerosomatic and somatovisceral reflexes.</p>

aspects below has on the patient

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Fluid congestion, pain, hypersympathetic tone, especially associated with the apex of the thoracic kyphotic curve

Lymphatic Considerations

- Altered fluid, electrolyte and osmolarity balance occur due to lymphatic stasis, hormonal and stress responses of the body
- Edema is ever present and accumulates proportional to tissue trauma, release of inflammatory mediators and integrity of the return mechanisms of the lymphatic system
- Stagnation and third spacing of fluids alters local tissue physiology.

Musculoskeletal manifestations of pulmonary disease – predictors

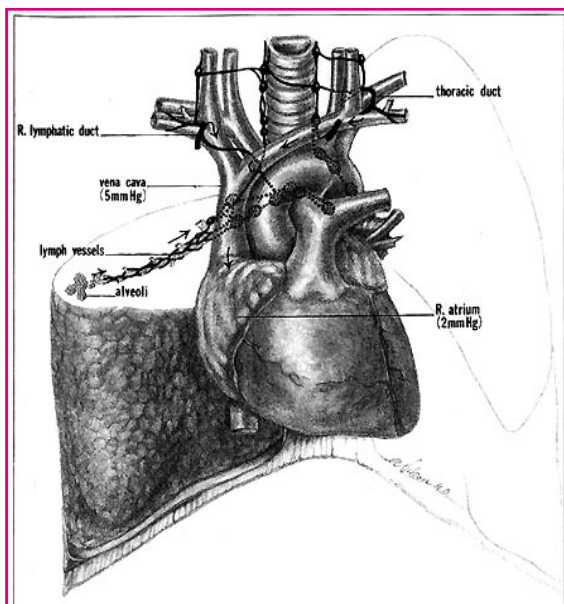
- C2-3 most common somatic predictor
- T2-y most common somatic predictor (BEAL, JAOA 84)

Pulmonary lymphatics

- Pleural lymphatics devoid of smooth muscle
- Flow unidirectional in secondary lymphatics due to valves
- Para bronchial and para vascular lymphatics rely on pressure changes and mechanical motion to function
- Extrinsic forces move lymphatic fluids

Respiratory-circulator system

- The “respiratory venous pump”
- With inspiration, a pressure gradient between the right atrium (2mm) and the vena cava (5mmHg) causes lymphatic flow from lung parenchyma



or chronic aspects?

Acute: changes due to acute pneumonia.

Chronic: All COPD changes are chronic, as are the compensatory musculoskeletal findings from the fall; the kyphosis is chronic; acute changes due to acute pneumonia.

Common findings in patients with COPD

- Barrel chest
- Overuse of accessory muscles of respiration, especially intercostals and scalenes
- Restricted shoulder girdle
- Elevated and restricted sternum

Benefits shown from osteopathic treatment in patients with COPD

- Improved PCO₂, O₂ saturation, total lung capacity and residual volume
- Increased walking distances
- Fewer infectious diseases
- Less subjective dyspnea

Generalized sense of better quality of life

<p>ate treatment plan letal components complaint</p>	<p>Goals for osteopathic manipulative management—include:</p> <ul style="list-style-type: none"> • Along with hydration and medications OMT is employed. • Normalize autonomic tone—Rib raising; treat the OA somatic dysfunctions (any vagal contribution) • Improve thoracic cage compliance: thoracic myofascial release (<i>Foundations</i>, pp. 786-787); “rib raising” by gentle paraspinal inhibition in acute phase, after acute phase may use more direct method (<i>Foundations</i>, pp. 950-951), mild springing, <u>gentle</u> direct method manipulation. • The use of a recoil effort with a lymphatic pump has been found to increase air trapping and should be avoided • Enhance lymphatic return to the heart • Reduce contributions to the facilitated cord segments, thereby reduce sympathicotonia (hypersympathetic tone) to the lungs • Maximize efficiency of the diaphragm—cervical spine, suboccipital inhibition (<i>Foundations</i>, pp.781-781) and relieve any mid-cervical somatic dysfunction; thoracolumbar soft tissue release; re dome the diaphragm (diaphragmatic release) – indirect method (<i>Foundations</i>, pp. 952-953), CV-IV • Give a general plan for manipulative treatment of the patient – see teaching points Section II, #9 <p>The treatment plan could include:</p> <ul style="list-style-type: none"> • Gentle fascial release to hip and sacroiliac, • Gentle articulatory technique to ribs and spine, • Rib raising (supine lateral traction and passive range of motion to inhalation and exhalation), • Lumbocostal arch release (external arcuate ligament release) by lateral traction to twelfth ribs, • Direct diaphragm release, • Direct sternal release, • Thoracic pump to ribs and sternum, • Thoracic duct (siphon) technique, • Balanced ligamentous technique to C2, • Condylar decompression (possible vagal involvement), CV4.
<p>How often do you see the patient</p>	<p>If severe enough for In-Hospital: up to bid (3-5 minutes each visit); Watch the respiratory rate and the pulse to avoid overstressing the patient.</p> <p>Follow-up: within 1 week after release from the hospital Outpatient: follow-up in 2-3 days, then 4-7 days after that</p>
<p>What are the considerations for an inpatient, outpatient, and home care?</p>	<p>This is an outpatient case; with pneumonia of lesser severity. Outpatient OMT may prevent hospitalization.</p>
<p>What should you talk to your patient about regarding their complaint and your treatment?</p>	<p>e.g. The tension in your ribs and back is preventing decent movement of ribs and back. It may be preventing better breathing. The treatment may help you breathe better and may help the medicine get to your lungs more effectively.</p>

<p>13. How will you communicate your findings, diagnosis, and rationale for OMM treatment to your preceptor?</p>	<p>Note primary diagnosis.</p> <p>Describe the place of the somatic dysfunction in the host's ability to cope with and recover from the illness.</p> <p style="text-align: center;"><u>Host + Disease = Illness</u></p> <p>We are addressing the Host aspect with OMT. Describe measurable outcome and means for addressing potential complications in overall patient care, such as further decompensation of heart and ventilatory failure.</p>
<p>14. What coding and billing information for evaluation and management and procedural services will you generate?</p>	<ul style="list-style-type: none"> • The diagnosis of somatic dysfunction in the assessment justifies the use of OMT • Somatic dysfunction diagnosis must be present in order to bill for the OMT that was performed. OMT is considered a procedure. • 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 • 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 <p><u>You must have a non-somatic dysfunction diagnosis included for this case</u></p> <p>E/M- Diagnosis- Procedure codes-</p> <p>99252-25 Expanded Inpatient Consult plus OMT procedure: 98927 (5-6 areas treated) Or 99213-25 plus OMT procedure 98927 (5-6 areas treated) -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>
<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				
		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
	Lower lobe Pneumonia	X	739.0	Head		739.5	Hip/Pelvis
	Mild COPD	X	739.1	Cervical		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		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:
5. Facilitator demonstrates the key treatment techniques:
 - a. Gentle fascial release to hip and sacroiliac
 - b. Gentle articulatory technique to ribs and spine
 - c. Rib raising (supine lateral traction and passive range of motion to inhalation and exhalation)
 - d. Lumbocostal arch release (external arcuate ligament release) by lateral traction to twelfth ribs
 - e. Direct diaphragm release
 - f. Direct sternal release
 - g. Thoracic pump to ribs and sternum
 - h. Thoracic duct (siphon) technique
 - i. Balanced ligamentous technique to C2
 - j. Condylar decompression (possible vagal involvement), CV4
6. 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

Left picture:

<http://www.mayoclinicproceedings.com/inside.asp?AID=1371&UID=>

Right Picture:

http://info.med.yale.edu/intmed/cardio/imaging/cases/pneumonia_rl/index.html

