Clinical Osteopathically Integrated Learning Scenario

Patient with Gastroesophgeal Reflux Disease

Description of COIL

This Clinical Osteopathically Integrated Learning (COIL) scenario focuses primarily on the palpatory evaluation and supportive osteopathic manipulative treatment for a patient with gastroesophageal reflux disease (GERD).

The COIL is divided into two sections:

Section One:

The **Roundtable Discussion Workshop** includes a discussion and evaluation of the patient's case history, diagnosis, pathophysiology, osteopathic principles involved, functional anatomy, treatment options, contraindications and (if time permits) a demonstration of manipulative treatment techniques that are applicable for this patient.

Section Two:

The **Patient-based Application Workshop** is the supervised application of manipulative treatment techniques for a patient with this diagnosis. It is designed to evaluate the student's/physician's diagnostic and psychomotor skills when providing an osteopathic manipulative treatment for an actual (or simulated) patient.

> *If time permits, the instructor may deliver this entire two-section program at one time. However, it is recommended that the program be divided nto its two sections. Ideally, the sections should be separated by a number of days. This provides time for the student or physician to review and practice appropriate techniques before completing the second section. If an actual patient is not available for the second section, a simulated patient may be used and the psychomotor skills of the student or physician evaluated.*

Section One: Roundtable Discussion Workshop

I. Description

This section is a roundtable-type presentation and discussion on the osteopathic approach to the treatment of a patient who has GERD.

II. Cognitive Components

A. Case Presentation

A 33-year-old male presents with a one-month history of episodes of mid-epigastric pain, a "burning" sensation in his chest, an associated dry cough, and occasional regurgitation. The pain worsens after eating and when he is lying flat. The patient has increasing postprandial fullness and early satiety. He also states waking up from the pain and burning, with a sore throat and hoarse voice. The patient reports associated mid-thoracic, bilateral back pain that occurs during the episodes. The symptoms are partially relieved by adjusting from a lying to a sitting position and with the use of over-the-counter (OTC) medications Mylanta® and Zantac.

5.1 The patient has been a marketing manager for a mid-size company for eight years. He does not smoke, use any medication or drugs other than an occasional OTC, and is a social drinker only. He exercises regularl

Physical Examination:

Vital Signs: Temperature, 99.1° F; Blood Pressure, 132/78; Respiratory Rate, 18; Pulse, 80; Weight, 190 lbs.

Eyes: Pupils equally round and reactive to light.

Ears: Tympanic membranes clear; canals clear bilaterally.

Nares: P atent without nasal septal deviation; pharyngeal mucosa pink and moist.

Throat: Oropharynx pink and moist; no erythema, tonsillar enlargement, lesions, lingual erosion of teeth, lymphadenopathy, or nodulary; thyroid normal size.

Cardiac: Regular rate and rhythm; no murmurs, rubs, or gallops.

Lungs: Clear to auscultation bilaterally; no rales, rhonchi, or wheezing.

Abdomen: Non-distended, soft, non-tender; normal active bowel sounds.

Musculoskeletal: Muscle strength 5/5 upper and lower extremities, full range of motion, no tissue texture changes or asymmetry.

Neuro: 2–12 intact; deep tendon reflexes intact bilaterally; sensation intact; 5/5 motor strength.

Osteopathic Structural Examination:

- Test CBC: Hemoglobin and hematocrit within normal range; not showing microcytic indices.
- Upper Gastrointestinal Endoscopy: Mild inflammation at GE junction.

Diagnostics:

- Diaphragmatic tightness noted.
- Rib motion decreased.
- Rotation measured at 40 degrees bilaterally.

B. Pathophysiology

1. Reflux occurs in most people in varying degrees. Symptoms of GERD can include sore throat, nausea, regurgitation, retching, and abdominal contractions. Most commonly, patients complain of heartburn. Extra-esophageal symptoms include chronic hoarseness, chronic cough, asthma, and non-cardiac chest pain.
2. Patients with sub-sternal chest pain without evidence of coronary artery disease may have atypical GERD. Pain is characterized as either dull or sharp, radiating around the throat, jaw, upper extremities, and back. It is important to note that the pain is exacerbated by physical activities, with the exception of bending over (which will aggravate the condition). 5.1
3. GERD is a result of gastric juices overcoming the lower esophageal sphincter (LES) pressure and re-entering the esophagus. Other factors include delayed gastric emptying, decreased salivation, sliding and para-esophageal hiatal hernia, increase or decrease of intra-abdominal pressure, a shorten LES (<2–5 cm), or frequent transient lower esophageal sphincter relaxation (TLESR).
4. Decreased LES resting tone is most commonly seen in patients with severe GERD.
5. A 1999 study by Joel Richter, MD, found that the potency of the acid as well as an in increase bile acids may be contributing factors.
6. Trigger factors that may exacerbate symptoms include specific foods (e.g., raw onions, chocolate, caffeine, peppermint, citrus, alcohol, tomato and tomato products, spices); habits such as eating 2–3 hours before bedtime or large meals; physical activity; stress; smoking; and certain sleeping positions. Elimination of gastric colonization of Helicobacter pylori may aggravate GERD symptoms. Temporary conditions such as pregnancy and some medications are also trigger factors.

C. Functional Anatomy

Includes knowledge of structure and physiology necessary to properly carry out the osteopathic manipulative treatment support.

1. GERD is the result of ineffective functioning of the anti-reflux barrier.
2. Acid and pepsin from the stomach cause irritation of the esophagus.

3. The parasympathetic portion of the autonomic nervous system must function appropriately for treatment to be successful.
4. Gravity, swallowing, and saliva are important protective mechanisms for the esophagus.
5. Strengthening of the diaphragm and maintenance of the pressure gradient are important aspects in treatment.
6. Left-sided rib pain may result from GERD or be secondary to musculoskeletal issues arising from GERD.

D. Goals for Osteopathic Manipulative Management

Goals of osteopathic treatment in a patient with GERD are freeing rib motion and enhancing diaphragmatic functioning. Includes a review of treatment pearls; a general plan for manipulative treatment of the patient; and a discussion of treatment options, contraindications and plans for follow-up evaluation and treatment.

1. Evaluation somatic dysfunction particularly the left side T5–T9. Suggested soft tissue techniques are direct myofascial release or thoracic HVLA.
2. Chapman's reflex treatment has had some positive results.

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E. Contraindications and Cautions Regarding Treatment

See contraindications to treatment, Foundations, pp. 1015–1024.

Once a diagnosis of GERD has been made and other conditions have been ruled out, osteopathic manipulation can be comfortably performed.

1. Patients with para-esophageal hernia can develop a specific stomach ulcer known as a Cameron's erosion. This condition is a result of the stomach twisting upon its self and contributes to chronic slow blood loss and anemia.
2. Patients with excessive bile acid should be tested for Zollinger–Ellison syndrome (ZES). Although rare, some patients have developed tumors—gastrinomas (two-thirds are malignant)—in the pancreas and duodenum, which can result in tumors in the pituitary and parathyroid glands.
3. Chronic GERD results in Barrett's esophagus, due to over and repeated exposure to bile acid. This condition results in metaplasia of the stratified squamous epithelium lining of the lower esophagus and significantly increased rate of adenocarcinoma.

F. Instructor's Notes

Personal clinical pearls and lessons learned from previous COIL presentations.

1. Displacement of the lower esophageal sphincter or the proximal stomach above the diaphragm can be involved in symptoms of GERD.
2. Motility and mucosal resistance are both involved in GERD

III. Psychomotor Components

If time permits, this is carried out on a simulated patient model.

1. Practice palpatory diagnosis. See techniques under Section D above. Diagnostic procedures include a complete musculoskeletal exam with a focus on the abdomen and inclusion of the diaphragm, cervical and thoracic spine and associated musculature, and rib motion.
2. Demonstrate key treatment techniques in the body regions involved. This includes the use of gravity and posture in alleviating symptoms. Palpation of the abdomen and appreciation of peristalsis and motion are necessary.
3. Evaluate the plan for treating the patient in the appropriate position, localization of gentle forces, and activation.

IV. References

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McPhee S, Papadakis M, Tierney L. Current Medical Diagnosis & Treatment. 46th ED. New York, NY: Lange Medical Books/McGraw-Hill; 2007.

Richter J. Do we know the cause of reflux disease? Eur J Gastroenterol Hepatol. 1999 Jun; 11 Suppl 1:S3-9.

V. Examination Questions

This involves answering multiple choice questions regarding the treatment for a patient with GERD. (denotes answer)*

1. Symptoms of GERD include:
    A. Sore throat
    B. Regurgitation of food
    C. Abdominal muscle contractions
    D. All of the above*
    E. There are no cardinal signs of GERD; symptoms vary by individual.

2. Atypical GERD is seen
    A. In pregnancy
    B. When the symptoms are positional
    C. In H. pylori–negative individuals
    D. In patients with atypical chest pain and a negative cardiac evaluation*

3. Triggering factors for GERD include
    A. Body position*
    B. Hypersensitivity to specific foods
    C. H. pylori
    D. Tarsal tunnel somatic dysfunction

4. Treatment of somatic dysfunction in GERD focuses on
    A. Fascial distortion model techniques to loosen up esophageal fascia
    B. Treatment of T5–T9 and the diaphragm*
    C. Pharmacologic therapy only
    D. Surgical intervention

5. Which of the following statements is true?
    A. The sympathetic nervous system reduces blood flow to the entire GI tract.
    B. The sympathetic nervous system reduces GI motility.
    C. Osteopathic manipulation is indicated to reduce reflex facilitation.
    D. All of the above.*

Section Two: Patient-Based Application Workshop

I. Description

This section includes the practical application of osteopathic treatment techniques to support the patient with GERD.

II. Psychomotor Components

(Refer to Section One for regions of the body that are involved.)

1. Examination of the patient using TART, including postural screen, palpation, segmental motion testing, and diagnosis of somatic dysfunction.
2. Application of philosophy and treatment technique.
3. Re-evaluation of the patient after treatment is completed to assess result. If a simulated patient is used, then the student or physician should verbalize length of treatment and future treatment goals.

III. Cognitive Components

1. Documentation in the medical record.
2. Post-treatment discussion.

Note: It is recommended to use the standardized outpatient form included in each of these chapters for documentation.

Physician:_____ Date: _____

Title: [ ] Resident (Specialty) _____

[ ] Intern [ ] OMS III [ ] OMS IV

Critical Actions Evaluation Checklist of Osteopathic Principals

CRITICAL ACTION	COMPLETED		COMMENTS
	Yes	No	
Become familiar with the patient's history physical examination findings, laboratory and other diagnostic findings.			
Perform an osteopathic structural examination.			
Determine significant areas of somatic dysfunction.			
Determine body region(s) to be treated with OMT.			
Apply OMT to at least the body region determined to be the most in need of treatment at present time.			
Treat other significant somatic dysfunctions if feasible.			
Document treatment and immediately observable effects.			

Trainer:_____

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