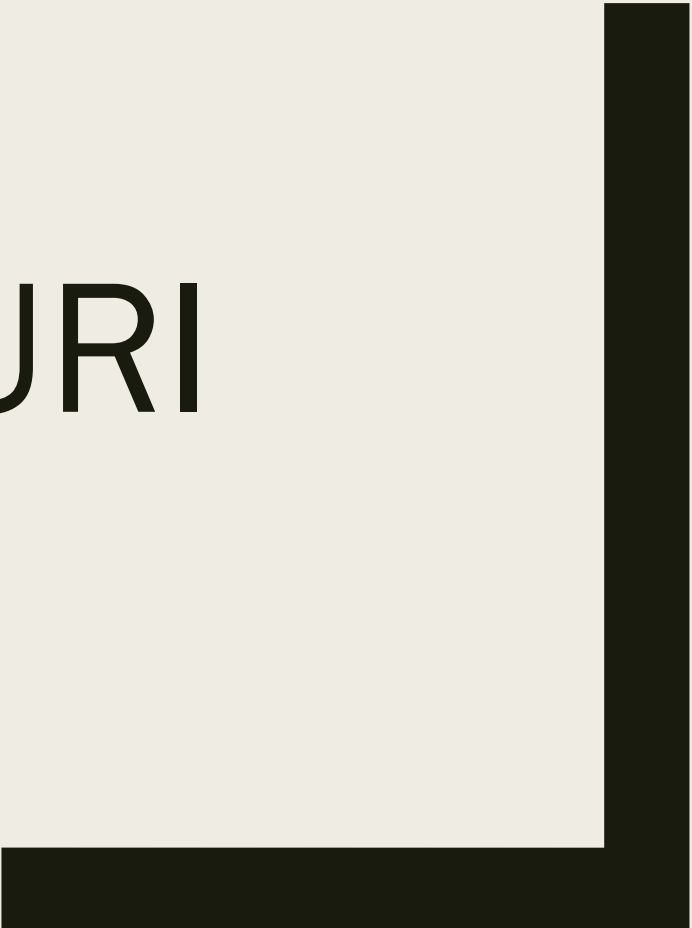




CHAIR OMT: URI

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Objectives

By the end of this lecture the learner will:

- Describe the pathophysiology of acute sinusitis/ upper respiratory infection.
- Recognize the clinical manifestations of acute sinusitis/ URI.
- Choose/select OMT techniques to help relieve predominate symptoms.
- Demonstrate OMT techniques to treat sinusitis
- Compose a quick protocol for implementing OMT in care plans for diagnoses of sinusitis or URI
- Describe patient/parent modalities for self-treatment

Case

- 36 year old otherwise healthy female presenting to primary care clinic with complaints of facial pain, nasal congestion and nonproductive cough for roughly 4 days.

PE:

- VSS
- HEENT: NC/AT. EOM were intact and PERRL. Her nasal cavities demonstrated clear congestion and with edematous and erythematous nasal. Her tongue was midline and her throat showed erythema with active clear drainage without exudate.
- NECK: was supple and no masses or thyromegaly were appreciated.
- HEART: RRR with no murmurs, gallops or rubs.
- LUNGS: clear to auscultation bilaterally

Differential Dx:

- Rhinosinusitis
 - *Frontal*
 - *Ethmoid*
 - *Maxillary*
- Acute Otitis Media
- Allergic Rhinitis
- Postnasal Drainage
- Somatic Dysfunction
 - *Cranial, cervical and thoracic regional*

Osteopathic Structural Exam

- Restricted left rotation of cervical range of motion.
- Tenderness at occipito-atlantal joint on the right at the insertion of splenius capitis muscle,
- C3 ERLSL; C4 FRRSR; C7 NRLSR; T2 NRLSR; T4-6 ERRSR
- Elevated first rib on the right

Osteopathic Manipulative Treatment modalities utilized in encounter

- Suboccipital release- Direct inhibition
- Thoracic inlet release - MFR ★
- First rib- HVLA/ ME/ articular ★
- Sinus inhibition ★
- Effleurage ★
- Ear Pull/ Gallbreath ★
- Thoracic pump
- Rib raising
- Thoracic - HVLA (Texas twist)/ ME

Other Management Interventions

- Antibiotic use
- Identify predisposing factors
 - *Identify allergen triggers*
 - *Avoid exposure*
- Antihistamines
- Topical nasal steroids
- Decongestants
- Saline nasal spray or Lavage
- Immunotherapy
- OMT

*Many parents seek adjunctive care for their children

Case Progression

- Patient tolerated the OMT well
- reported a “gush” of drainage with effleurage and ear pull technique (with right ear “pop”)
- Slight reduction in frontal sinus pain/pressure

Anatomy and Function

- Bilateral air filled cavities
 - *Frontal*
 - *Ethmoid*
 - *Maxillary*
- Midline
 - *Sphenoid*
- Function mainly to protect the lungs
 - *Filter the air*
 - *Regulate the temperature*
 - *Humidify the air*
- 23,000 breaths per day means sinuses are working at all times

Drainage Pathways

- Maxillary , frontal, anterior ethmoid sinuses drain into the middle turbinate
- Posterior ethmoid into the superior meatus
- Sphenoid sinus into the sphenoethmoid recess

Definition and Pathology

■ Acute Sinusitis

- *Inflammation of the paranasal sinuses*

■ Chronic Sinusitis

- *>8-12 weeks*
- *Recurrent*

■ Causes

- *Anatomical issues – narrow ostia, polyps*
- *Related illnesses – allergies, asthma*
- *Infectious agents – bacterial, viral, fungal*

■ Drainage of ostia is affected by:

- *anatomical obstruction*
- *mucosal edema causing stagnation*
- *Proptosis from left maxillary sinus impaction*

5 Models of Osteopathic Approach to Patient Care

Model	Anatomical Correlates	Physiological Function
Biomechanical	Postural muscles, spine, and extremities	Posture and motion
Respiratory-Circulatory	Thoracic inlet, thoracic and pelvic diaphragms, tentorium cerebelli, costal cage	Respiration, circulation, venous, lymphatic drainage
Metabolic- Energy	Internal organs, endocrine glands	Metabolic processes, homeostasis, energy balance, regulatory processes; immunologic activities and inflammation and repair ; digestion, absorption of nutrients, removal of waste ; reproduction
Neurological	Head (organ of special senses), brain, spinal cord, autonomic nervous system, peripheral nerves	Control, coordination, and integration of body functions; protective mechanisms; sensation
Behavioral	Brain	Psychological and social activities, e.g., anxiety, stress , work, family; habits, e.g., sleep, drug abuse, sexual activities, exercise; values, attitudes, beliefs

Sympathetic ANS

- Eyes- pupil dilated, focus for distant vision



Glands- vasoconstriction, reduced secretions

- Sweat glands- increased
- Heart- increased contractility and conduction



Lungs- relaxation of bronchioles; increase thick secretions

- GI tract- reduced contractions, contracts sphincters, reduced secretions and motility
- Uterus- contraction

Parasympathetic ANS

- Eyes- pupil constricts, focus for near vision



Glands- stimulates copious secretions

- Sweat glands- palm sweating
- Heart- decreased contractility



Lungs- decrease goblet cells to enhance thin secretions

- GI tract- increases contractions, relaxes sphincters, increased secretions and motility
- Uterus- relaxation

Mary Lee-Wong, MD, Division of Allergy and Immunology, Beth Israel Medical Center

J Allergy and Therapy 2011/2:2
<http://dx.doi.org/10.4172/2155-6121.1000109>

- 16 patients from their allergy clinic requesting alternative therapies for chronic sinus pain
 - 15 accepted OMT/1 patient declined
- Before and After OMT:
 - score card to assess the severity of their sinus pain
 - 5 techniques were performed for 3 minutes each (total 18 minutes of OMT)
- Direct Pressure and “Milking”
 - Frontal Sinus pressure and milking technique
 - Supra-orbital pressure technique
 - Maxillary sinus pressure technique
 - Direct pressure over the temporal areas
- Drainage or “Milking” technique
 - Nasal passages are milked
- 3 minutes each cycles
- 6 cycles were performed
- Total of 18 minutes of OMT

Results:

1) OMT reduces sinus pain

- **Average Self Reported Sinus Pain/Pressure/Congestion (N=15)**

- *Reduced from an average score of 3.07 to 2.33*
- *Paired t-test $p=0.0012$*

2) OMT moderately improves symptoms

- **11 out of 15 Patients Reported Improvement with OMT of Sinus Symptom**

3) OMT was not painful

- **11 reports no pain, and 4 reported minimal pain**

Eileen DiGiovanna, An Osteopathic Approach to Diagnosis and Treatment, 3rd ed.

- “Sinusitis is almost always in conjunction with somatic dysfunction of the upper cervical spine.
- Sympathetic innervation to the sinus areas arises from the upper thorax and travels through the cervical region.
- An occipito-atlantal (OA) somatic dysfunction is the most common.
- Treating the cervical somatic dysfunctions and performing sinus drainage techniques help to relieve pain as well as assist in drainage of the sinuses.”

Proposed Protocol in the Treatment of Sinusitis

- Open thoracic inlet
- OA
- 1st rib
- Effleurage/ pressure/ milking
 - *Frontal, Supraorbital notch, maxillary, temporal, nasal*
- Lymph Effleurage the Anterior and Posterior Cervical Chains
- Ear Pull
- Gallbreath Technique

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LAB: STRUCTURAL EXAMINATION & OSTEOPATHIC MANIPULATIVE TREATMENT TECHNIQUES

Frontal sinuses

■ Pressure:

- *Physician seated at head of the supine patient (modified to stand in front of patient)*
- *Physician applies gentle pressure to the frontal sinuses with the thumbs*
- *Pressure is slowly increased and then released in a rhythmic motion*
- *Repeat several times*

■ Milking:

- *Physician places thumbs adjacent to each other in the middle of the forehead and with gentle sweeping pressure moves thumbs laterally toward the temples and then inferiorly towards the maxillary area*
- *Repeat the cycle 6-8 times.*

Supraorbital Notch

- Pressure:

- *Gentle pressure is applied over the supraorbital notch*
- *Repeat several times*

- Milking:

- *Sweep thumbs along the eyebrow ridge bilaterally*
- *Repeat 6 cycles*

Maxillary sinus

■ Pressure:

- *Apply pressure to the maxillary area with both thumbs*
- *Repeat several cycles*



■ Milking:

- *Massage the maxillary sinuses with the thumbs in a caudad direction starting at the top of the nose and pressing down the side of the nasal passages toward the maxilla*
- *Repeat 6 cycles*

Temporal Region

- Place your thenar eminences in the patient's temporal fossae (just lateral to the eyebrows), bilaterally
- Exert a gentle direct pressure over the temporal area both sides at the same time
- Apply pressure and release in a rhythmic fashion

Nasal Bones

■ Pressure:

- *Place the right thumb on the left side of the patient's nose (nasal bone) and the left thumb on the right side of the nose.*
- *Note that the thumbs are crossed above the patient's nasal bridge.*
- *Pressure is applied alternately by each thumb,*
- *Move down the length of the nose*

■ Milking:

- *Uncross the thumbs:*
 - *right thumb on right side*
 - *left thumb on left side*
- *Create a sweeping motion bilaterally down the sides of the nose and out over the maxillae*
- *Repeat 6 cycles*

Ears

■ Pull

- *A gentle bilateral ear pull will help mobilize the underlying fascia and the temporal bones.*
- *The physician will notice that one side may be less mobile and may require longer to feel a release.*
- *The side that is more medial often correlates with an internally rotated temporal bone.*

■ Galbreath

- *A passive soft tissue technique is used to induce jaw motion to create increased drainage of middle ear and tonsillar areas via the eustachian tube and lymphatics.*
- *This technique can be used for chronic otitis media.*

Lymph Effleurage the Anterior and Posterior Cervical Chains

- Apply a milking motion of pressure to the anterior and posterior cervical chain
- Moving from the TMJ to the clavicle

Conclusion

- Sinusitis is probably one of the best examples of the importance of mobility and the consequences of stasis.
 - *sinus infections occur because of stasis. It is with that stasis that the set up for infection occurs.*
- Restoring motion of the cranial bones thinning the secretions with increased fluid intake and steam, normalizing the autonomic to the sinuses which control the secretory mechanism and circulation, and assuring mobility of the cervical spine for drainage will help eliminate the mechanism for infection.
- Antibiotics will eventually eradicate the organism once they reach the sinus mucosa, but will not help the sinuses to drain, so consequently without good drainage, the set up for infection still exists. Osteopathic manipulation is a most important modality because it can promote drainage by restoring mobility.

References

Textbooks:

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- Lee-Wong M, Karagic M, Doshi A, Gomez S, Resnick D. An osteopathic approach to chronic sinusitis. *J Aller Ther.* 2011;2(2): 109. doi:10.4172/2155-6121.1000109.

Questions?