Osteopathic Considerations of Lymphatics for HEENT Infections

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“Let the lymphatics always receive and discharge naturally, if so we have no substance detained long enough to produce fermentation, fever, sickness and death. We strike at the source of life and death when we go to the lymphatics...”

A.T. Still
Objectives

- Role of the Lymphatic System
- Anatomy and physiology of the lymphatics
- Lymphatic treatment goals
- Applications of Osteopathic Lymphatic Treatments for HEENT
- Lymphatic OMM Lab Techniques
Role of the Lymphatic System

- Circulatory system
- Maintains homeostasis
- Immune function
- Anti-Inflammation
- Digestion
All vascularized tissue has lymphatics except:
- CNS
- bone/bone marrow,
- placenta,
- cartilage,
- lens and cornea
- Epidermis
- inner large blood vessels.
The Lymphatic System

- Initial lymphatics/capillaries
- Collecting channels
- Afferent (prenodal) vessels
- Lymph nodes
- Efferent (postnodal) vessels
- Thoracic duct and Right lymphatic duct
- Venous system
Lymph Drainage

- **Left thoracic duct**
  - Lower body, left thorax, left lung, left arm, left head and neck

- **Right lymphatic duct**
  - Heart, right lung, right arm, right head and neck
Lymphatics Homeostasis

- 10% of intravascular proteins and fluid volume “leak out” of into interstitial space and returned into circulation via lymphatics.
- Removes fluid, particulates and proteins from the interstitium
- Maintain osmotic balance between extracellular, intracellular and intravascular fluids.
Failure of Proper Lymphatic Drainage

- Retain metabolic waste
- Persistent Infection
- Edema
- Congestion/Head Pressure
Lymphatics Immune function

- Infection ➔ Neutrophils ➔ Macrophages containing bacterial antigen ➔ lymph nodes ➔ release of B-Cell and T-Cell Lymphocytes

Weakening of antigenic stimulation has been demonstrated by chronic lymph stasis and lymphedema
Inflammation and Edema

- Acute inflammation disrupts homeostatic process in the interstitium and dramatically increases burden of lymphatics.
- **Inflammatory mediators** ➔ vasodilation and increased capillary permeability ➔ influx of fluid and plasma protein into the interstitium ➔ edema
Lymphatics and Anti-Inflammation

- Continuous production and removal of these inflammatory mediators is needed for efficient progression and resolution of inflammation and healing.
- Delay in removal of inflammatory mediators and exudates results in prolonged inflammation with poor and delayed healing → adhesions and fibrosis.
- Tissue drainage by lymphatics offers escape route for many of the inflammatory mediators and exudates and is important role in virtually every aspect of the inflammatory process.
Lymphatic Treatment Goals

1. Open myofascial pathways at transitional areas/diaphragms of body
2. Maximize normal diaphragmatic motions
3. Increase pressure differentials to augment fluid flow beyond normal levels
4. Mobilize targeted tissue fluids into lymphatic system

INCREASE LYMPHATIC DRAINAGE ➔
DECREASED EDEMA AND INFLAMMATION
1. Open myofascial pathways in transitional areas/diaphragms

A. Supraclavicular space "head and neck"
B. Epigastic region "abdomen and chest"
C. Posterior axillary fold "arm"
D. Inguinal region "lower extremity"
E. Popliteal space "leg"
F. Achilles region "ankle and foot"
8 Diaphragms

1. Plantar Fascia
2. Knee Diaphragm
3. Pelvic Diaphragm
4. Respiratory Diaphragm
5. Thoracic Inlet Diaphragm
6. Suboccipital Diaphragm
7. Tentorium Cerebelli
8. Diaphragm Sellae
Suboccipital Diaphragm

- Obliquus capitis inferior
- Obliquus capitis superior
- Rectus capitis posterior minor

- OA release
- Myofascial Stretching
- Treating cervicals
Thoracic Inlet Diaphragm

- Treat upper thoracics, ribs, clavicle, scalenes, pecs, pre-tracheal fascia
Respiratory Diaphragm

The diaphragm as seen from the front. Note the openings in the vertebral portion for the inferior vena cava, esophagus, and aorta.
Respiratory Diaphragm release
Doming of the Diaphragm
2. Maximize Diaphragm motions

- OMT to cervicals
- Treat clavicle, scalenes, upper ribs, pecs
- Treat lower ribs 6-12, QL, L1-L3, Psoas
- Doming of the Diaphragm
3. Augment Lymphatic pumps

- Thoracic Pump
- Splenic Pump

- Facilitates bringing toxins and other antigens into close contact with the macrophages of liver and allows spleen to screen and remove damaged cells in circulation.
4. Mobilize targeted tissue fluids into lymphatic system

- Galbreath technique
- Cervical Chain Drainage
Applications of Osteopathic Lymphatic Treatments for HEENT Conditions
WINTER IS COMING
Lymphatic treatment indications for HEENT

- Sinusitis
- Otitis Media/Externa
- Pharyngitis/Laryngitis
- URI
- Tooth Infections/Pain
Sinusitis

- Inflammation of lining of paranasal sinuses
- Allergic Vs Infectious (Viral/Bacterial)
- Headaches
- Supportive Case vs Intranasal corticosteroids vs Antibiotics
Sinusitis Treatments

- OA Release
- Sinus Effleurage
- Trigeminal Nerve Stimulation
- Alternating Nasal Pressure Release
Acute Otitis Media

- Pain, bulging and inflammation of TM
- Children > Adults
- Bacterial vs Viral
- Antibiotics vs Ear Tubes vs Supportive Care
Otitis Media Treatment

- OA Release
- Auricular Drainage
- Galbreath Technique
- Cervical Chain Drainage
Pharyngitis/Laryngitis

- Common complaints in outpatient setting
- Inflammatory process of the pharynx or larynx
- Viral vs Strep/Bacterial
- Supportive care vs Antibiotics
Pharyngitis/Laryngitis Treatment

- OA Release
- Submandibular Release
- Galbreath Technique
- Cervical Chain Drainage
- Hyoid Release
• Common acute complaint in outpatient setting
• Inflammation of nasal, pharynx, larynx, trachea.
• Sinusitis, Pharyngitis, Cough, Nasal discharge and congestion, rhinitis, etc.
• Viral Rhinosinusitis, Strep Pharyngitis, Epiglottitis, Pertussis, Laryngotracheitis, etc.
• Supportive Care vs Abx vs Hospitalization
URI Treatments

- Thoracic Inlet MFR
- OA Release
- Cervical Chain Drainage/Soft Tissue
- Hyoid MFR
- Sinus Effleurage
Lymphatic Techniques Lab

- OA Release
- Thoracic Inlet Techniques
- Submandibular Release
- Frontal Temporomandibular/Maxillary sinus effleurage
- Alternating Nasal pressure
Suboccipital Diaphragm/OA Release

- Contact Suboccipital tissues with pads of fingers.
- Use weight of head to provide anterior force on tissues.
- May add lateral force by externally rotating wrists, and cephalad traction of occiput by curling fingers towards your body.
- Hold for 30 seconds or until tissues release.
Thoracic Inlet Release

- Place hands on shoulders with thumbs on posterior 1\textsuperscript{st} rib region, and index finger and third digits on the superior and inferior to the clavicle at the sternoclavicular joints bilaterally.

- Use enough pressure to control the skin and underlying fascia.

- Physician monitors motions of the tissues superiorly/inferiorly, left and right circumferential motion, and translation left and right.

- Contact direct or indirect barriers and hold for 20-60 seconds.
Submandibular Release

- Place fingers below submandibular region and apply a superior pressure to determine fascial restrictions.
- Use enough pressure to control the skin and underlying fascia.
- Physician monitors motions of the tissues superiorly, translation left and right.
- Contact direct or indirect barriers and hold for 20-60 seconds.
Frontal Temporomandibular/Maxillary Sinus Effleurage

- Place fingers above medial eyebrows or above maxillary sinuses.
- Apply slow and gentle stroking (effleurage) from medial to lateral.
- Continue pressure inferiorly in a continuous gentle motion towards TMJ and inferiorly over mandible.
- Repeat effleurage motions for at least 30-120 seconds.
Alternating Nasal Pressure

- Fingers of cephalad hand contacts the frontal bones on both sides of the nasal bridge, while fingers on caudad hand contact both sides nasal bridge.
- Apply distracting force on frontal nasal bridge.
- Apply opposing translatory left and right forces on frontal bones and nasal bridge.
- Continue alternating opposing pressures for 30-120 seconds.
Auricular Drainage

- Keep affected ear side facing up
- Contact anterior and posterior portions of the ear in between 3rd and 4th digits.
- Contact skin and deep fascia and begin circulatory motion clockwise for 30 seconds and then alternate to counterclockwise motion.
- Continue alternating circulatory motions for 30-120 seconds.
Galbreath Technique

- Keep affected ear/TMJ side facing up
- Cephalad hand stabilizes posterior head from moving.
- Caudad hand contact patient’s jaw at the ramus of the mandible with 3rd to 5th fingers.
- Have patient open mouth gently while physician pulls jaw from the TMJ slightly forward towards midline.
- Gentle pressure applied and released in slow rhythmic fashion for 30-120 seconds.
Cervical Chain Drainage

- Keep affected ear/TMJ side facing up
- Cephalad hand stabilizes posterior head from moving.
- Caudad hand fingers make contact over sternocleidomastoid muscle.
- From cephalad to caudad, fingers roll along muscle in a milking fashion.
- Can be performed on both anterior and posterior lymphatic chains.
- Caution: Do no perform directly over painful, indurated lymph nodes.
Trigeminal Stimulation Technique

- Contact the supraorbital nerves on the medial eyebrows, infraorbital nerve below the medial eye lateral to nasal bridge
- Apply gentle pressure on trigeminal nerves and add circulatory motions of clockwise and counterclockwise.
- Continue alternating circulatory motions for 30-120 seconds.
Rib Rising

- Contact the pads of the fingers on the paravertebral tissues over the costotransverse articulation on the side near the supine patient.
- Lift fingers into the paravertebral tissues, simultaneously drawing the fingers lifting the spine off the table and placing a lateral stretch on the paravertebral tissues.
- May perform for 30-60 seconds.
Summary

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References

References

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