



Osteopathic Manipulative Treatment for Sinusitis Relief: A Pilot Study



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Introduction

- Sinusitis is inflammation of the nasal cavity and paranasal sinuses, with symptoms of nasal congestion, postnasal drip, and facial pain or pressure.¹
- Sinusitis affects more than 30 million Americans each year with health care costs up to \$11 billion annually.¹
- Few studies have explored osteopathic manipulative treatment (OMT) as an adjunct sinusitis therapy.
- The Lee-Wong et al. (2011) study of 15 patients with chronic rhinosinusitis demonstrated improvement in symptoms using direct pressure and sinus drainage OMT techniques.
- The goal of the study is to **determine the therapeutic benefits and safety of OMT sinusitis protocol in relieving the symptoms of sinusitis.**

Hypothesis

- The hypothesis of the study is that **OMT sinusitis protocol is a safe and beneficial treatment to manage the symptoms of sinusitis.**

Study Design

- Recruitment flyer was sent to all osteopathic medical student from Western University of Health Sciences (n=450) in November 2019 to December 2019.
- Twenty-two osteopathic medical students with sinusitis symptoms volunteered to participate in the study.
- An IRB-approved survey was administered pre-and post-OMT sinusitis protocol.
- In the survey, participants rates severity of sinusitis symptoms including sinus congestion, sinus pain, headache, smell, and fatigue.
- Symptom scale: 0= no symptoms, 1= minimal symptoms, 2= moderate symptoms, and 3= severe symptoms.
- The data was analyzed using a Wilcoxon signed rank test. (SPSS, version 27) Significance was determined by p>0.05 and 95% confidence interval.

Osteopathic Manipulative Treatment

14-minutes sinusitis OMT protocol was developed and performed by a single OMT specialist. Techniques were selected to improve lymphatic flow and to balance the autonomic nervous system.

Sinusitis OMT Protocol:

- 1) For the cervical, upper thoracic, and upper rib regions, soft tissue, myofascial release, articular, muscle energy, and high velocity low amplitude techniques were performed.
- 2) Frontal and maxillary tapping, and infraorbital and supraorbital nerve massage were performed (Figures 1 & 2).
- 3) Chapman points for the sinuses in the 1st intercostal spaces were located bilaterally (Figure 3).
- 4) Intra-oral sphenopalatine ganglion release was performed (Figure 4).
- 5) For the abdominal diaphragm myofascial release was performed (Figure 5).



Figure 1. Frontal tapping



Figure 2. Maxillary tapping



Figure 3. Chapman points for sinuses

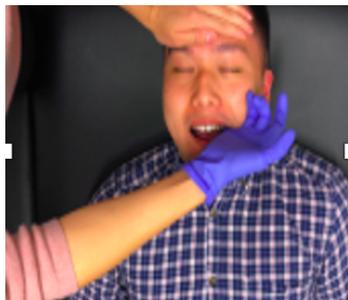


Figure 4. Sphenopalatine Ganglion Release



Figure 5. Diaphragmatic Release

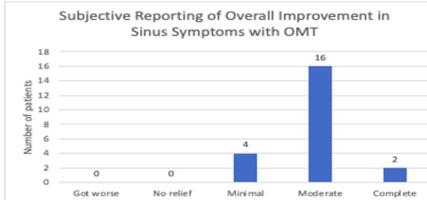
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Results

Table 1. Changes in symptoms of sinusitis pre-OMT and post-OMT (n=22)

Symptom	Changes in symptom severity, Mean (SD)		p value
	Pre-OMT	Post-OMT	
Sinus congestion (SC) ^a	1.36 (0.79)	0.64 (0.66)	0 [*]
Postnasal drip (PND) ^a	1.50 (0.96)	0.86 (0.71)	0.003 [*]
Sinus pain (SP) ^a	1.50 (1.47)	0.68 (0.95)	0.002 [*]
Headache (HA) ^a	1.95 (2.04)	0.82 (1.50)	0.002 [*]
Smell (SM) ^b	1.32 (0.84)	1.73 (0.55)	0.024 [*]
Fatigue (FA) ^a	0.64 (0.49)	0.36 (0.49)	0.014 [*]



All subjects (N=22) showed statistically significant improvement in sinus congestion, sinus pain, headaches, smell, fatigue after OMT with each p<0.05. 16 out of 22 subjects (72.7%) reported moderate symptomatic relief. 2 out of 22 subjects (9.1%) reported complete resolution of symptoms. 4 out of 22 subjects (18.2%) reported minimal symptomatic relief. No adverse events were reported.

Discussion

Our study supports the hypothesis that OMT sinusitis protocol is safe and beneficial in improving symptoms of sinusitis. OMT sinusitis protocol was developed to affect muscle constraint on venous and lymphatic flow, and to alter somatovisceral reflexes to the sinuses.² Muscle activity is a well-recognized mechanism of lymphatic flow. Because lymphatic channels are embedded in the cervical fascia, OMT techniques using soft tissue, muscle energy, and myofascial release to the cervical region contribute to increased lymphatic flow to the head.² Furthermore, our sinusitis protocol was also developed to address somatic dysfunctions to balance autonomic nervous systems. Tissue changes in the upper cervical and upper thoracic regions would be expected to accompany sympathetic motor dysfunction of the nose and paranasal sinuses in patients with sinusitis.² Thus, OMT can be used to address somatic dysfunctions in these areas as well as utilize sphenopalatine ganglion release technique to impact sympathetic vasomotor tone to the sinus area and to ultimately improve the symptoms of sinusitis.

Limitations of the study include the lack of a control group that received no OMT and small sample size. Moreover, having a more diverse subject population in the future can serve as a better predictor of the effectiveness of OMT in various populations. In conclusion, OMT may be recommended as a stand-alone or an adjuvant treatment to traditional modalities to maximize treatment benefits and to relieve symptoms of sinusitis.