An OMT Conundrum

Transient Worsening Before Improvement in Asthma with OMT.

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Patient examined: 07/11/2023 - Present
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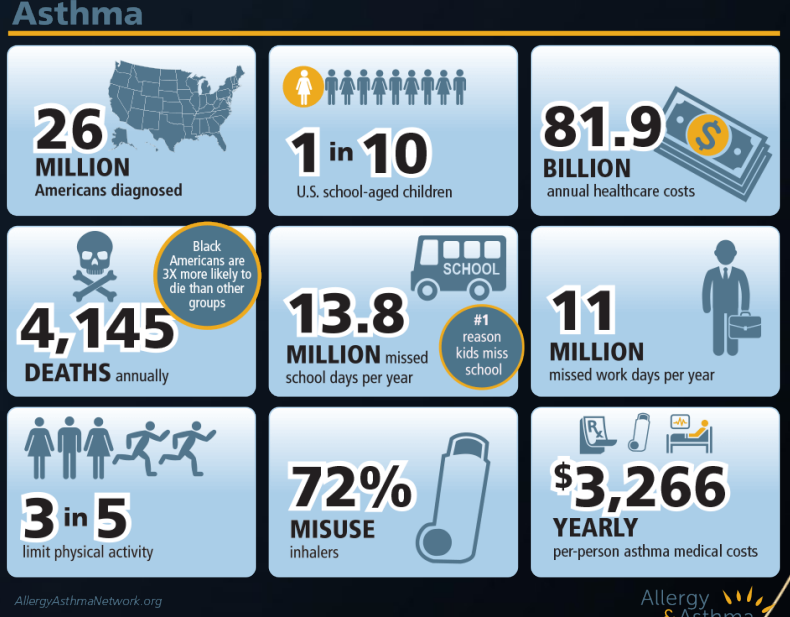
Introduction & Background

- **Asthma** is a major noncommunicable disease characterized by:
  - hyperresponsive bronchial smooth muscle,
  - bronchoconstriction,
  - periodic airway obstruction, and
  - inflammation/remodeling of the bronchial passages [1].
- Involves a constellation of symptoms:
  - Cough, Wheezing,
  - Shortness of breath, chest tightness,
  - Asphyxiation, and even death [1,2].

Infographic by the Asthma and Allergy Foundation of America [3]

Introduction & Background

- Asthma:
  - Affects approximately 8% of the population in the United States [4].
  - **Is responsible for approximately 986,000 emergency visits [5],**
  - **Causes approximately 95,000 hospital stays per year [5].**
- **Osteopathic Manipulative Treatment (OMT), stands as an effective complementary therapy** in the management of asthma [6,7].
  - Its philosophy centers around the body as a whole and addresses key areas most affected in asthma:
    - *Thoracic cage, Diaphragm; Autonomic nervous system*



Infographic by the Allergy Asthma Network[8]

Subjective HPI

July 11th, 2023

- A 37-year-old female, with a medical history of mild persistent asthma, sought evaluation at the Osteopathic Treatment Center presenting with dyspnea, wheezing, chest tightness, and bilateral, sharp mid-thoracic back pain.
    - gradual onset approximately one week prior to presentation.
    - denied any pain radiation from the primary site
    - characterized the discomfort as a 7/10 on the pain scale.
    - Intermittent symptoms with partial alleviation following the administration of her prescribed daily Advair inhaler.

Subjective

PMHx:

- Childhood Asthma - diagnosed at the age of 4
- **Mild Persistent Asthma** – diagnosed date unknown

PSHx:

- Dilation and curettage– 2010

FH:

- Father – Diabetes Mellitus Type 2, Congestive Heart Failure, Stroke in 2009
- Mother – Gastric Cancer; passed in 2001

Medications:

- **Advair** (Fluticasone propionate / Salmeterol) – Daily, MDI, d.u.
- **ProAir** (Albuterol) – 90 mcg, 3-4x/week, MDI
- **Loratadine**– 10mg; PRN; for seasonal allergies

Allergies

- Pollen – Reaction: rhinorrhea
- Shellfish– Reaction: anaphylaxis
- Percocet – Reaction: hives

SH:

- No tobacco or drug use

Objective:
Physical Exam

General Appearance:

- Patient appeared in no acute distress.

Vital Signs:

- HR: 30 bpm
- RR: 16 rpm
- BP: 133/82 mmHg

Cardiac Exam:

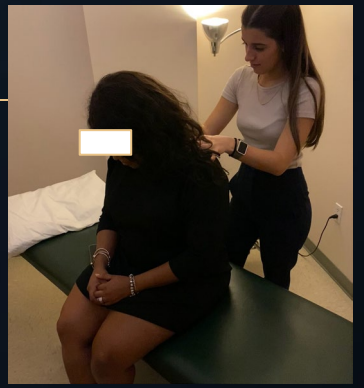
- S1 and S2 heard sounds heard.
- No S3 or S4 auscultated.
- No murmurs, clicks, or rubs detected.

Pulmonary Exam:

- Decreased breath sounds on the L>R.
- No wheezes auscultated throughout lung fields
- Increased Tactile Fremitus on R>L Lung fields.
- Chest expansion symmetrical

Objective:

Osteopathic Structural Exam



Demonstration photograph osteopathic structural exam

- Head:
  - **OA compression (DMFR)**
- Neck:
  - B/L Paracervical muscles taut (ST)
  - R Hypertonic levator scapulae (CS)
- Pelvis:
  - R anterior rotation (MET)
  - R pubic bone inferior shear (MET)
- Sacrum:
  - L on R (ART)

- Thoracics:
  - **T1 FRrSr (MET)**
  - **T4-9 NRlSr (HVLA)**

- Rib Cage:
  - **L Rib 2-5 inhaled pump handle (MET)**
  - **L Rib 7-8 inhaled bucket handle (ART)**
  - **L Rib 7 tenderpoint (CS)**
  - **B/L Ribs 2-8 restricted (Rib Raising)**

- Other:
  - **Diaphragm Taut (Doming)**
  - **Taut L>R thoracic inlet (DMFR)**
  - **Thoracic congestion (Tapotement, Speed Massager)**

Diagnosis & Hypothesis

In this patient, dyspnea, wheezing, and mid-back pain were linked to thoracic facet dysfunctions, limited rib cage mobility, and lymphatic congestion.

These factors collectively hindered the effective removal of bodily impediments, thereby compromising optimal respiratory motion.

Diagnosis & Hypothesis

Given the tenets of Osteopathic Medicine, OMT would relieve her symptoms by:

1. **Mobilizing the thoracic cage and thoracic spine**
2. **Restoring optimal diaphragmatic motion and circulation**
3. **Promoting balance within the autonomic nervous system**

—

This therapy combination would reduce inflammation and improve lung function, potentially measurable and demonstrable through pulmonary function tests.

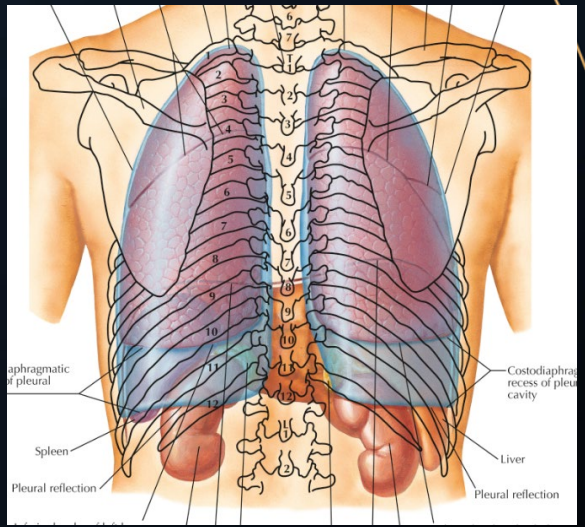


Image obtained from Netter Atlas of Human Anatomy [9]

Treatment Course:

Methods

- Peak Expiratory Flow (PEF) using a Peak Flow Meter was recorded **before, after, and 48 hours following weekly OMT** for 9 separate weeks.
- The most recurring and successful treatments were:
  - **Speed massager** on thoracic cage to facilitate mucus removal
  - **Rib Raising <30 seconds** to increase thoracic cage mobility and stimulate sympathetic chain ganglia
  - **MET** for inhaled pump handle and bucket handle L ribs
  - **DMFR** for thoracic inlet decongestion
  - **Diaphragm doming and thoracic pump** for improved respiration and circulation
  - **HVLA** of the Thoracic Spine T1-T6

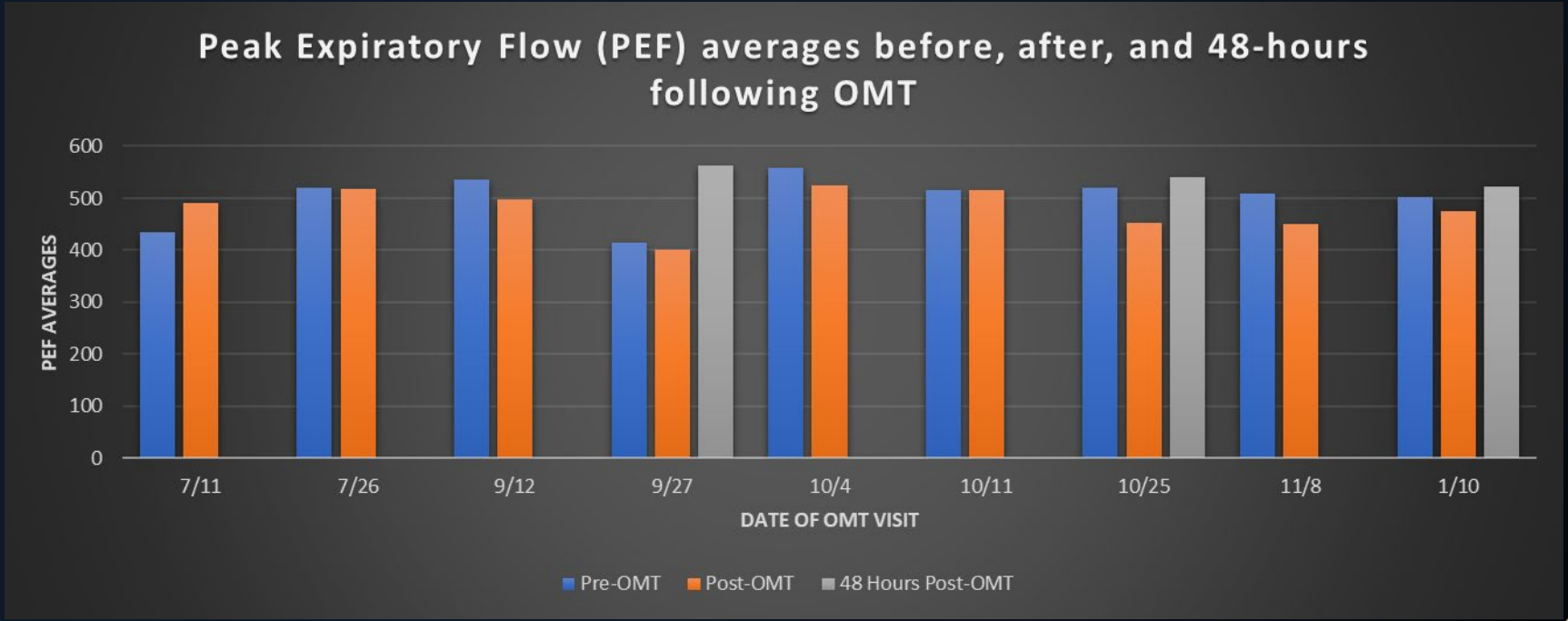
Image of Microlife Peak Flow Meter utilized [10]

Demonstration photograph of seated rib raising

Image of speed massager used for OMT [11]

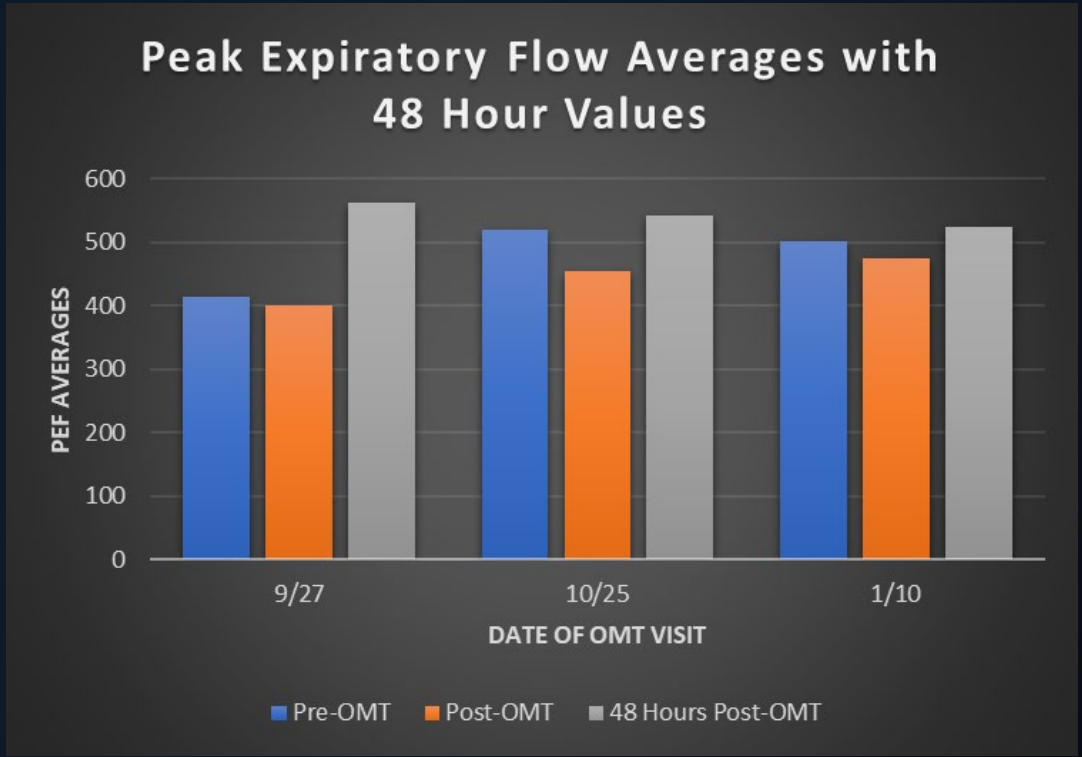
Treatment Course:

Outcomes



Treatment Course:

Outcomes



Treatment Course:

Additional Outcomes

- Patient reported that *(while receiving consistent OMT)* :
  - complete cessation of rescue inhaler (ProAir Albuterol)
  - decreased Advair inhaler usage from daily to weekly
  - increased phlegm production the day following the OMT session.

- Her **symptomatology was completely resolved** while receiving consistent OMT but regressed back to baseline 1 month after her consistent OMT treatments.

Conclusion:

- This case documents a **unique phenomenon observed in certain asthma patients** undergoing OMT,
  - *transient worsening in lung function tests precedes notable improvements in values days after the initial treatment.*

- Observed delays in PEF improvement could be due to:
  - *initial dislodgement of congestion before achieving better respiratory balance and structural equilibrium.*
  - *Muscle relaxation causing slight parasympathetic activation.*

Conclusion:

- Limitations of this study include:
  - *the possible impact of mild allergies on PFTs*
  - *limited PEF measurements.*

- Future research should:
  - *explore factors behind the delay*
  - *incorporate comprehensive spirometry analyses.*

Conclusion:

- **Physicians may want to discuss potential transient setbacks** as part of the treatment process with their patients

- Nonetheless, this **finding epitomizes Osteopathic Medicine's philosophy** of the body's ability to heal itself after structural impediments are controlled.

Thank You!

Do you have any questions?

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Disclaimer

Presentation of this case was approved by the patient.

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