ABSTRACTS

LBORC-NUFA Poster Abstracts 2025: Residents

Every year at the American Academy of Osteopathy Convocation, the Louisa Burns Osteopathic Research Committee (LBORC) and the National Undergraduate Fellows Association (NUFA) together host a research poster presentation session for residents and medical students. The 2025 poster abstracts for residents are presented here. To enhance the readability of this special feature, abstracts have been edited for basic style only. The content has not been modified; the information provided reflects information that was submitted by the primary author, including professional degrees and affiliations.

Case Study

Katelyn Campbell, DO; Hugh M. Ettlinger, DO, FAAO, FCA

Use of Osteopathic Manipulative Medicine in Treatment of Neurologic Sequelae of Sjögren's Syndrome

Background: Sjögren's Syndrome (SS) is a chronic disease characterized by inflammation of exocrine glands; however, up to 20% of patients with SS have central or peripheral neurologic symptoms. There are case studies to support the use of osteopathic manipulative treatment (OMT) in patients with dystonia of neurologic origin, but there is sparse research on the use of OMT in patients with dystonia secondary to SS.

Case: A 64-year-old female patient with SS and trigeminal neuralgia presents with painful cranial dystonia. After persistent symptoms despite medication, physical therapy (PT), occupational therapy (OT), and speech therapy (ST), she was referred to Osteopathic Neuromuscular Medicine clinic. She had developed many compensations in PT, OT, and ST, which improved presenting symptoms, particularly speaking and eating, but resulted in painful muscle hypertonicity.

On initial presentation, the patient endorsed significant face, neck, upper back, and chest pain. Her physical exam and osteopathic structural exam were significant for R condyle and sacrum compression as well as hypertonicity of the right masseter, right lateral pterygoid, and bilateral trapezius muscles. She was treated primarily with osteopathic cranial manipulative medicine, balanced ligamentous tension, myofascial release, muscle energy, and counterstrain.

Results: Over six appointments, she endorsed improvement in her dystonia and decreased pain and tension, namely improved tongue control and less pain with speaking. The compression of the R condyle and sacrum resolved. The hypertonicity of the right masseter, right lateral pterygoid, and bilateral trapezius muscles was persistent though improved. During this period, she continued PT, OT, ST, and a prednisone taper.

Conclusion: OMT benefited this patient with neurologic sequelae secondary to SS. Other patients with SS could greatly benefit with OMT as a component of their multidisciplinary care.

William J. Candelori III, DO; Gary C. Gailius, DO

Functional Improvement without the Surgery Referral, A Case Presentation

Introduction: Muscle tears in the body produce limitations in functional status and severe pain levels, forcing patients to opt for invasive surgical treatments. Conservative treatments, i.e. physical therapy, inconsistently exhibit overall improvement for patients, but few studies have been done using Osteopathic Manipulative Therapy. The following case depicts OMT providing functional improvement and pain reduction in a patient with full thickness tears of her right gluteus medius and minimus tendons.

Case: LK, a 72-year-old female, presented with right hip pain after multiple falls from riding her bike. She previously tried chiropractic treatments, steroid injections and physical therapy without relief. She initially rated her pain an 8/10 on VAS, with significantly limited right hip abduction and external rotation. Structural exam indicated a right anterior innominate with + Right ASIS compression test. Right Hip MRI showed a full-thickness tear of the distal right gluteus medius and minimus tendons with proximal tendon retraction.

Results: After 2 sessions of OMT using muscle energy and counterstrain techniques, the patient had a significant positive reduction in her pain score to a severe pain score of 2/10, and she also noted that she was able to walk the mall without having to rest.

Discussion: This case study indicates the benefit OMT has for muscle tendon tears through substantial improvement in functional status and significant reduction in pain levels, providing a non-operative treatment option for patients. Limitations of this case presentation towards future clinical application include the use of OMT for other regions that commonly show muscle tears, i.e. the shoulder, along with applicability for acute muscle tears vs. chronic muscle tears.

Michele Collingsworth, DO; Max Schaefer, DO; April Emmons, DO

When the Framework Fails: The Cost of Overlooking the Basics in Chest Pain

Introduction: Somatic dysfunction of the ribs is an underdiagnosed condition that can present with significant, unspecified pain, leading to costly and extensive workups. This case demonstrates the importance of osteopathic manipulative medicine (OMM) in diagnosing and treating rib dysfunction.

Case: A 56-year-old female with a complex medical history, including lupus, fibromyalgia, asthma, and obesity, presented to the emergency department with severe unprovoked right-sided lower chest pain, exacerbated by inspiration and movement of the right upper extremity. Despite reassuring cardiac, gastroenterology, and neurologic evaluations, the patient continued to have episodes of severe pain, resulting in several acute care visits. The patient underwent extensive medical workups and high-risk pain medication regimens without resolution of symptoms. During her second hospitalization, an osteopathic exam of her right lower ribs demonstrated an inhalation dysfunction. She underwent a series of osteopathic manipulative treatments (OMT) involving articulatory and muscle energy techniques that provided substantial long-term improvement in her range of motion and pain. Following OMT, she was discharged with no subsequent emergency department visits or hospital readmissions.

Results: Osteopathic exam followed by OMT provided a low-risk diagnosis and treatment, resulting in improvement in the patient's symptoms, showing the potential of OMM in reducing patient harm while minimizing healthcare costs.

Discussion: This case demonstrates the importance of a comprehensive osteopathic exam in chest pain evaluation, particularly when the etiology remains uncertain despite reassuring workups ruling out multiple organ systems. This case highlights the value of osteopathic assessment and treatment in achieving an efficient low-risk diagnosis and definitive treatment of rib dysfunctions, showing the potential to reduce the risk of harm to the patient while being cost-effective for both the patient and healthcare system.

Clay Coppinger, DO, MBA; Nida Rit, OMS IV; John Coppinger, DO

The Use of Osteopathic Manipulative Medicine During the Inpatient Evaluation for Acute Coronary Syndrome

Introduction: While musculoskeletal causes for chest pain are common, in the acute setting, standard of care is to rule out life-threatening conditions and does not include the use of osteopathic evaluation and treatment. This case provides an example of how diagnostic and therapeutic osteopathic medicine is of value when implemented concurrently with standard of care during evaluation for acute coronary syndrome (ACS).

Case: A 54-year-old male presented with typical cardiac chest pain and was admitted for an ischemic evaluation by cardiology. Upon admission, osteopathic manipulative medicine (OMM) performed by the hospitalist service was used in parallel with the standard of care to evaluate and treat chest pain, which was highly suspicious for ACS. Daily osteopathic treatments using myofascial release and balanced ligamentous tension were targeted at the patient's specific somatic dysfunction discovered via osteopathic structural examination (OSE).

Results: OSE was diagnostic for costochondritis and somatic dysfunction prior to definitive ACS rule out via coronary angiography. Osteopathic Manipulative Treatment (OMT) resulted in an immediate post-treatment pain reduction of 5 points on a 10 point pain scale. Subsequent treatments resulted in an average of 3.67 point reduction over the hospital course (3 days), with a downward trend in baseline pain. OMM allowed for a diagnosis of costochondritis and provided the patient a clear etiology for his chest pain.

Discussion: This case outlines how OMM is complementary to the standard of care in the acute setting and is a valuable part of an interdisciplinary approach, providing benefits such as expedited patient recovery and reduced length of stay. Further research should be conducted to guide the use of inpatient OMM for evaluation and treatment of acute chest pain regardless of the initial differential.

Ceferino Cruz, DO; Eren Ural, DO; Gary Gailius, DO; Katie Neuer, DO

Optimization of Abdominal Surgery and Controlling Intractable Neuropathic Pain with Peri-operative OMT

Introduction: OMT effectiveness in patients with existing chronic neuropathic pain following invasive procedures are not commonly discussed. While surgery itself can induce neuropathic pain, viscerosomatics are also involved in pain pathways that propagate and feed forward a continuous loop: a maladaptive reflex known as segmental facilitation. Optimizing circulation and lymphatics before surgery can also help promote wound healing. This case study will demonstrate how OMT, coordinated before and after surgery, can reduce chronic pain exacerbations.

Case: A 37-year-old man with a history of intractable migraines, Arnold Chiari I malformation, and multiple previous abdominal surgeries complained of testicular pain, migraines, and global neuropathic pain. His previous left inguinal hernia repair caused him over four weeks of daily unremitting migraines and postsurgical abdominal pain. The patient had a scheduled right inguinal hernia repair with a plan to undergo OMT perioperatively. The patient was treated one month and one week before the surgery and then two weeks postop with emphasis on visceral, craniosacral, and lymphatic techniques.

Results: The patient exhibited a significant decrease in recovery time and headache exacerbations following the procedure. He reported a two-week recovery post-surgery with an overall reduction of migraine episodes by 50%. His pain was subjectively reduced by two points on his pain scale by two weeks postop which was a significant improvement to him.

Discussion: Optimizing this patient's circulation and addressing his facilitated viscerosomatic reflexes in the perioperative period not only reduced his recovery time, but toned down his baseline pain level. This case not only demonstrated the effects OMT can have on reducing neuropathic pain exacerbations following surgery, but further studies may elucidate the benefits of coordinating OMT to optimize patient recovery with other procedures.

Elena Dirusso, DO; Jeremy Shugar, MS, DO

Resolving Deep Gluteal Syndrome with OMT

Introduction: Deep Gluteal Syndrome (DGS) is a cause of posterior hip pain that frequently presents with radiating pain, which is most commonly caused by compression of the sciatic nerve by muscles in the deep gluteal space. First line treatment is conservative. For more rapid relief, many specialists will do ultrasound-guided injections. Surgical intervention is recommended in cases that do not respond to conservative treatment. However, there is an option that would avoid unnecessary invasive treatment—that is Osteopathic Manipulative Treatment (OMT).

Case: A 69-year-old female with PMHx of lumbar spinal surgery (2011) presents with pain of the right lower back/buttocks into the anterior right thigh. She was evaluated and treated throughout four office visits at the ONMM clinic. She was referred from the ED where she described 10/10 pain. On exam at the ONMM clinic, she had severe pain when reproduced by palpating an area of hypertonicity in the right gluteal region. Particularly, counterstrain of that counterstrain point, as well as BLT and other treatment modalities of the rest of her body, contributed to the positive outcome.

Results: From the first to last visit, the patient reported 10/10 severity of pain to 0/10. She was worried the onset of back pain meant that she would need surgery again, and experiencing the pain remit with a hands-on treatment, was a relief for the patient. She was grateful that we were able to resolve it with non-invasive techniques.

Conclusions: OMT is an important adjunctive or, in this case, stand-alone treatment for those with DGS. More physicians should be aware of the positive outcomes this treatment can have and how it can help patients live an improved quality of life.

Hannah Fadenrecht, DO; Nichole Thorsvik, DO

Rhabdo Resuscitation and Recovery Using Osteopathic Manipulative Treatment

Introduction/Background: McArdle Disease (also referred to as glycogen storage disease V) is an autosomal recessive disorder characterized by a deficiency of skeletal muscle phosphorylase. It often presents with episodes of exercise intolerance, and in some cases, rhabdomyolysis requiring hospitalization. Current practice guidelines emphasize supportive care, with a paucity of literature regarding management with osteopathic manipulative treatment (OMT).

Case: A 16 year-old male with a history of McArdle Disease and thrombophlebitis was admitted for rhabdomyolysis secondary to medication-induced hyperemesis. He was evaluated for OMT on hospital day 3. Despite down-trending creatinine and creatinine kinase levels, he remained hospitalized due to unremitting abdominal and flank pain. Trials of lidocaine patches, heat pads, ice packs, acetaminophen, muscle relaxants, opioids, and anxiolytics failed to control his pain. Osteopathic physical examination revealed an asymmetric cranial rhythmic impulse (CRI), significant abdominal lymphatic congestion, and right-sided hypertonicity and myofascial restriction spanning the thoracolumbar, pelvic, and sacral regions. Somatic dysfunctions were treated with cranial, soft tissue, myofascial release, and balanced ligamentous tension.

Results: Across two instances of inpatient OMT, a healthy CRI was re-established and the lymphatic congestion and myofascial tension resolved. The patient experienced a significant decrease in pain level and was discharged home.

Discussion: This case demonstrates a unique application for OMT in a patient with rhabdomyolysis secondary to McArdle Disease. Applying osteopathic principles to the pathophysiology–namely the myolysis and visceral insults–elucidates possible mechanisms of treatment benefit. Lymphatic congestion and myofascial tension secondary to muscle breakdown would expectedly impede recovery, as would viscerosomatic facilitation from kidney injury. OMT to address these somatic dysfunctions would, therefore, reduce impediments to recovery. Further studies on applications of OMT in related cases of muscle necrosis or damage are warranted.

Erica N. Mingo, DO; Mark J. Unger Jr., DO, MS

Novel COL4A1-related phenotype: generalized hypermobility in a patient with heterozygous missense mutation at NM_001845.6(COL4A1): c.4006G>A (p.Val1336Ile)

Introduction: Type 4 collagen is a major constituent of the basement membrane, providing mechanical support for the body's tissues. Pathogenic mutations in COL4A1 usually result from substitution of a glycine residue, resulting in varied neurological disorders including infantile hemiparesis, migraine with aura, porencephaly, and seizures. We present a case of novel COL4A1-related hypermobility in a patient refractory to treatment with osteopathic manipulative treatment (OMT).

Case: A 34-year-old female sought osteopathic management for chronic pain affecting the hips, back, and neck. History included back pain since age 11, recurrent subluxations and dislocations of the shoulders and hips, postural orthostatic tachycardia (POTS), and mast cell activation (MAS). On presentation, Beighton score was 5/9, indicating generalized hypermobility. Significant somatic dysfunctions (SD) of head, C-spine, T-spine, ribs, abdomen, and extremities were treated with MFR, BLT, ST, CS, and OCMM.

Results: The patient's SD was refractory after OMT administered once every 4-8 weeks for 22 months. Mean pain severity was 4 +- 1 on the 11-point Numeric Rating Scale. Beighton score remained 5/9 despite concurrent physical therapy. Genetic analysis identified N=1 mutation on a 92-gene panel of connective tissue disorders. The patient was heterozygous for NM_001845.6(COL4A1):c.4006G>A(p.Val1336lle) and ClinVar query did not identify a corresponding hypermobile-type trait or pathogenic classification.

Discussion: We present the first known case of generalized hypermobility in a patient with COL4A1 mutation. The patient's SD was refractory to OMT potentially due to increased musculoskeletal elasticity, suggesting a novel COL4A1-related syndrome further comprising POTS and MAS. If future research confirms causality, genotyping of COL4A1 may be indicated in the workup of hitherto undifferentiated cases of generalized hypermobility, including hypermobile Ehlers-Danlos Syndrome.

Gabrielle Schneider, DO; Shannon Garrison, DO

OMT for TBI: A Case Report Showing Improvements in Vision, Mastication, and Post-Traumatic Headaches

Introduction: Traumatic brain injury (TBI) results from a physical force to the head, with varying degrees of severity, that can lead to significant difficulties with speech, chewing/swallowing, cognition, vision, headaches, sleep, and decreased quality of life and function.

Case: A 22-year-old male presented to the outpatient Physical Medicine and Rehabilitation (PM&R) clinic. He was referred for his vision changes, bilateral trismus, and headaches. The patient sustained a TBI 3 years prior, complicated by bifrontal craniotomy and multiple facial fractures requiring orthopedic fixation. His exam showed left eye ptosis, facial asymmetry, and decreased mouth opening of 2cm. Balanced membranous tension (BMT) was used to target restrictions in his frontonasal suture, maxillary suture, occipitomastoid suture, and temporal bone. Direct inhibition was utilized to the hypertonic muscles of the jaw, particularly the lateral pterygoids. Myofascial release and muscle energy were used for his hypertonic neck musculature.

Results: Over a total of 6 sessions in 10 weeks, the patient had both subjective and objective improvements. His vision improved from 20/50 in his left eye to 20/20. For his trismus, the patient's mouth opening doubled to 4cm, which improved his speech and mastication. His Visual Analogue Scale (VAS) pain score for headaches decreased. The patient was able to stop all medications by his last treatment – previously taking acetaminophen, gabapentin, ibuprofen, methocarbamol, and ramelteon for headaches, jaw pain, and sleep. His facial asymmetry and ptosis also improved.

Discussion: Our case study suggests that the use of OMT after TBI can treat multiple symptoms when addressing somatic dysfunctions in the head and neck. Future areas of research could investigate earlier introduction of OMT for TBI, such as during acute rehabilitation stay.

Melanie White, DO; Anthony Furlano, DO

OMT for acute on chronic pain in systemic scleroderma

Introduction: Diffuse systemic sclerosis (SSc) is a rare disease characterized by vascular injury, inflammation, and tissue fibrosis. SSc is a multi-system disease process that affects almost every organ system including the musculoskeletal system.

Osteopathic Manipulative Treatment (OMT) has been utilized to improve overall pain and functioning in SSc by addressing the musculoskeletal system to optimize circulation and lymphatic drainage.

Case: A 68-year-old female with SSc and chronic respiratory failure presented for chronic thoracic back pain after lifting heavy boxes. Imaging was negative for bony pathology, and she had no improvement with medications. A single OMT session was completed to address her pain with utilization of balanced ligamentous tension, myofascial release, and lymphatic technique to correct her somatic dysfunctions focusing on optimizing systemic circulation and lymphatic drainage.

Results: A single session of OMT resulted in a decrease in her PROMIS-29 score (37/90 to 35.6/90) 2 weeks later with an average pain score of 7/10 that decreased to 3/10. Subjective improvements noted were complete resolution of thoracic spine pain, decreased need for supplemental oxygen with activity, and improved quality of sleep.

Discussion: Our case discusses a 68-year-old female with SSc and chronic respiratory failure successfully treated with OMT.

This case highlights the impact of musculoskeletal injuries on overall functional levels in patients with systemic inflammatory diseases and that OMT can be an effective adjunctive treatment to improve overall health and well-being.

Joshua Wright, DO; Nichole Thorsvik, DO

Tic Douloureaux: Applied Osteopathy for a Case of Refractory Trigeminal Neuralgia

Introduction/Background: Trigeminal neuralgia (TN) is a rare condition with an estimated prevalence of <0.1% in the general population. Mainstay treatment currently focuses on pharmacotherapy with anti-seizure agents and/or muscle relaxants, with surgical intervention

selectively chosen for refractory cases. Literature regarding the management of TN with Osteopathic Manipulative Treatment (OMT), is sparse with only a handful of case studies describing OMT for TN.

Case: A 43 year-old man presented with 15 years of frequent right posterior scalp pain radiating into the right eye and cheek. Associated symptoms included dizziness, nausea, photophobia, right eye pressure, blurred vision, scleral injection, and right-sided ptosis. He had failed many medications and underwent endoscopic sinus surgery without relief. His exam was notable for markedly diminished motion of the right hemi-cranium, an internally rotated right temporal bone, and chronic tissue texture changes at the right C4-C5 and C6-C7 levels. The patient was treated using myofascial release, strain-counterstrain, facilitated positional release, and osteopathy in the cranial field.

Results: The amplitude of craniosacral movement improved considerably and there was restoration of the rotational motion of the right temporal bone. Following treatment, the patient was able to palpate his right face without discomfort. Upon follow up, the patient reported a period of relief regarding skin sensitivity and pain intensity. Treatment is ongoing.

Discussion: This patient failed numerous costly mainstay treatments for TN. Treatment of a temporal bone dysfunction with OMT brought a period of symptomatic relief. This case study suggests that OMT can be a quick and effective means for managing symptoms of TN and calls for more research regarding the applications of OMT in the treatment of TN.

Original Research

Tyler Bendrick, MD; Melanie White, DO; Wassim Drissi, DO; Phillip Van Huigenbos, DO; Katie Hills, DO; Anthony Furlano, DO

Correlation of Ankyloglossia and Breastfeeding Difficulties in Infants Referred for Osteopathic Manipulation at a Family Medicine Residency Clinic: A Retrospective Chart Review

Introduction/Background: Ankyloglossia is a common congenital condition of a tight lingual frenulum and can be associated with breastfeeding difficulties in infants and babies. Current diagnosis requires multidisciplinary evaluation, and treatment modalities include osteopathic manipulation treatment (OMT), physical therapy, tongue stretching exercises, or frenotomy. OMT has been shown to improve breastfeeding difficulties, but there is little research for specifically its role in helping with breastfeeding related to ankyloglossia, or timing of OMT related to other interventions. We hypothesized that regardless of ankyloglossia severity, OMT would have either a perceived or measurable benefit in cases of difficult feeding.

Methods: All full term infants with a diagnosis of ankyloglossia (n=73) who were referred for OMT at the Mayo Clinic Family Medicine Residency–Eau Claire between 2018 and 2024 were reviewed. Records were divided into those who underwent a frenotomy and those who did not. The data for this study was analyzed using descriptive statistics.

Results: Thirty of 73 (41%) of infants underwent frenotomy procedure, with 9/30 (30%) receiving OMT before frenotomy, 12/30 (40%) after, and 9/30 (30%) both before and after. Of those that underwent frenotomy, 8/30 (27%) had a recorded severe frenulum restriction with improved feeding after procedure. Mothers of infants with mild and moderate restrictions 22/30 (73%) reported more subjective improvement with OMT than frenotomy. Subjective parental perception of improved breastfeeding was high 72/73 (99%) regardless of frenotomy status. No adverse events were reported from OMT.

Conclusions: The findings of this retrospective chart review indicate that OMT is a safe and effective treatment for ankyloglossia related breastfeeding difficulties in this population of term infants and highlights the need for further prospective research in this area.

Amber Brown, DO, MS; Derrick Goubeaux, DO; Jennifer Belsky, DO, MS

Osteopathic Treatment Decreases Pain and Opioid Use in Children with Acute Sickle Cell Disease Pain

Background: Children with sickle cell disease (SCD) suffer from acute SCD pain that confers substantial morbidity. Non-pharmacologic therapies are needed, as pharmacologic pain control is often inadequate. Osteopathic manipulative treatment (OMT) is a novel, potentially valuable adjunct therapy.

Hypothesis: OMT will decrease pain and opioid use in children with acute SCD pain.

Research Design: Prospective, single-institution, observational study evaluating patients with SCD aged 3-26 years hospitalized with acute SCD pain. IRB approval was obtained. Interim analysis included data obtained April 2024-November 2024.

Methods: Patients received standard-of-care pharmacologic management and were offered OMT. Informed consent was obtained. OMT was provided by a board-certified osteopathic physician. Safety was assessed by adverse event grading. Feasibility was defined as completion of OMT without interruption to standard care. Pain and constipation were assessed with validated FACES and Bristol stool scales, respectively. Oral morphine milligram equivalents (MME), laxative doses, and bowel movements within 24 hours of OMT were collected. Data were reported with descriptive statistics.

Results: Seven patients were screened and received OMT. Majority were female (n=5, 71%) with median age 16 years (range 10-19 years). All OMT encounters were completed without care interruption. No adverse events occurred within 24 hours of OMT. After OMT, all FACES scores were decreased (n=4, 57%) or unchanged (n=3, 43%). Oral MME decreased in most cases (n=6, 86%), with median decrease of 29%. Bristol stool scores indicated unchanged or softer stools in most cases (n=6, 86%). Three patients had bowel movements within 24 hours of OMT.

Conclusion: At interim analysis, OMT is feasible with no attributable adverse events. In this small sample, OMT resulted in decreased pain, opioid requirements, and constipation. Findings support continued investigation of OMT integration into SCD pain management.

David Risov, DO; Faheem Farooq, OMS II; Dylan Carlson, OMS II; Jacob Barnett OMS III; Gunnar Brolinson, DO, FOASM, FAOCFP; Nicole Fremarek, DO, MBA; Matt Chung, DO, R-MSK; Albert Kozar, DO, FAOASM, R-MSK; Georgina Flynn-Smith, MBEE; Vincent Wang, PhD; Jaeda Mattis, OMS III

Shear Wave Elastography Of The Thoracolumbar Fascia (TLF) As A Biomarker For Chronic Low Back Pain (CLBP)

Introduction: The TLF's role in proprioception, nociception, and both active and passive forces may contribute to low back pain (LBP). Shear Wave Elastography (SWE) is a form of ultrasound that determines the stiffness of tissue by measuring velocity of shear waves passing through soft-tissues. We hypothesize that a greater shear wave velocity at specific key transition zones of the posterior layer of TLF can predict CLBP subjects compared to patients with no LBP (NLBP).

Methods: Preliminary SWE analysis comparing CLBP to NLBP subjects were taken from AOA and DOD funded prospective studies (single factor, repeated measure design) that shared a common asymptomatic population and image assessment protocol. Subjects age 18 to 50 with BMI ≤ 30 were included. Two SWE images were obtained in both longitudinal and transverse orientations at 9 key transition zones of the TLF bilaterally and 1 centrally (23 regions total). Three regions of interest were sampled per image and averaged. These averages between CLBP and NLBP were compared at each location and probe orientation. A one-tail T-test was used for significance, with p- value of 0.05.

Results: Preliminary data of 31 subject's baseline scans (13 NLBP and 18 CLBP) showed statistically significant increased stiffness in 7 locations for CLBP patients.

Conclusion: This preliminary report suggests that SWE can demonstrate a significant increase in stiffness of regions of the TLF in subjects with CLBP, indicating potential use as a biomarker. The study is currently limited by preliminary mid-study results and pending post-treatment assessments. In addition, subjects with higher BMI made it difficult to interpret some TLF zones. Further research could include larger sampling, as well as blinded prospective pre- and post-treatment studies of the significant regions.

Jiwan Toor, DO; Stephen Stacey, DO, FAAFP

Patterns of OMT Use Across Diverse Practice Settings: Insights from a Multicenter Healthcare System

Background: Osteopathic manipulative medicine (OMM) has demonstrated clinical benefits in managing musculoskeletal and systemic conditions, yet utilization patterns remain poorly understood. This study addresses the research question: What are the patterns of OMM use across diverse practice settings in a large healthcare system, and how do these patterns inform clinical practice and resource allocation?

Methods: This retrospective study analyzed encounters involving OMM CPT codes across a multicenter healthcare system from January 2022 to May 2023. We

examined the frequency and distribution of OMT procedures, comparing community-based centers with a destination medical center. Data included procedure type, number of body regions treated, and associated diagnoses. Statistical comparisons were conducted to evaluate utilization patterns across settings.

Results: During the study period, the majority of OMM procedures were performed in community-based settings, with limited use at the destination medical center. Lumbar and cervical somatic dysfunctions were the most commonly treated conditions. Procedures often involved treatment of multiple body regions, with 3-4 regions addressed in the majority of visits.

Discussion: This study highlights the prevalent use of OMM in community-based settings. The findings suggest that OMT is appropriately targeted to conditions with strong clinical indications, such as lumbar and cervical somatic dysfunctions. Limitations include the retrospective design and reliance on CPT coding accuracy. Future research should explore barriers to OMT integration at destination centers and investigate how practice settings influence treatment selection and outcomes.

Conclusion: This study provides a foundational understanding of OMT utilization patterns within a large healthcare system. Insights from this research can inform resource allocation, optimize provider training, and guide efforts to improve access to OMT services across diverse clinical settings.

Melanie White DO; Tyler Bendrick, MD; Wassim Drissi, DO; Phillip Van Huigenbos, DO; Katie Hills, DO; Anthony Furlano, DO

Osteopathic manipulative treatment and breastfeeding, correlation between age at presentation, mode of delivery, and LATCH scores: a retrospective chart review

Introduction: The World Health Organization recommends exclusive breastfeeding for the first six months of life, however only 24.9% of infants in the United States meet this recommendation. Breastfeeding relies on proper neuromuscular structure and function. Osteopathic manipulative treatment (OMT) improves function by treating somatic dysfunctions. However, the optimal timing for initial visit, frequency, and correlation with mode of delivery and initial LATCH scores are unknown. Therefore, the primary aim was to understand the relationship of treatments between breastfeeding difficulties, age at intervention, mode of delivery, and initial LATCH scores for infants in a community practice.

Research design: Retrospective chart review.

Methods: Full-term infants (n=116) who had OMT charged during their visit at the Mayo Clinic Family Medicine Residency – Eau Claire between January 2018 and July 2024 were reviewed. 93 were referred for breastfeeding difficulties and included. Demographics, age at initial visit, initial LATCH scores, and mode of delivery were collected. Linear regression was conducted through Microsoft Excel and Kruskal-Wallis through BlueSky.

Results: At initial referral, individuals were on average 3.4 months old (0-13 months) and averaged 15 days (1-113 days) between OMT visits. Linear regression comparing age at presentation and initial LATCH scores demonstrated that for every one month increase in age, the LATCH score decreased by 0.17 (R2=0.08). There was no significant difference in age at presentation based on mode of delivery ($\chi 2=6.3$, p-value=0.179).

Conclusion: Younger individuals tended to have higher LATCH scores, and the mode of delivery did not correlate with age at time of referral. Prospective trials are needed to develop a predictive scoring system to identify which infants would most benefit from OMT and when. ■