

BRIEF REPORT

CONSIDERATIONS FOR AN OSTEOPATHIC APPROACH TO RHEUMATOID ARTHRITIS

Nicholas Averell, BS¹; Ahmed Gawash, BS¹; David F. Lo, MBS¹; Seth Spicer MS¹; Usmaan Al-Shehab, BS¹

¹Department of Medicine, Rowan University School of Osteopathic Medicine, Stratford, NJ

KEYWORDS

Osteopathic manipulative medicine

Rheumatoid arthritis

ABSTRACT

Rheumatoid arthritis (RA) is a chronic autoimmune disorder that primarily affects the joints. The condition causes inflammation, pain, stiffness, and sometimes deformity in the affected joints. RA can also affect other parts of the body, including the lungs, heart, and eyes, and it can lead to long-term disability if left untreated. By this report, we aim to: (1) evaluate the effectiveness of osteopathic manipulative medicine (OMM) as a treatment option for RA, with a focus on the patient's symptoms and overall quality of life, and (2) identify best practices for incorporating OMM into a larger treatment plan for RA. We present a vignette case of a 56-year-old female patient with a diagnosis of RA treated with OMM. While awaiting hydroxychloroquine clearance, the patient was treated with radiocarpal extension dysfunction (postisometric relaxation), counterstrain of the dorsal wrist, and high velocity, low amplitude (HVLA) of the posterior radial head dysfunction with a supination emphasis. On follow-up, the patient noticed significant relief of her symptoms after treatment and reported that her pain level had diminished to 0/10. This report highlights the effectiveness of OMM in treating RA symptoms. The patient's follow-up information supports the initial improvement in symptoms and suggests that OMM may reduce wrist pain in a patient with RA a few weeks posttreatment. Further studies should be evaluated to see the effectiveness of OMM techniques for RA across an entire patient population.

INTRODUCTION

Rheumatoid arthritis (RA) is a chronic progressive autoimmune disorder characterized by inflammation, pain, and stiffness in the joints and other body parts. RA affects 1.3 million adults in the United States.^{1,12} It is a multisystemic disease that can lead to joint destruction, disability, and reduced quality of life if left untreated.¹ RA is the most commonly diagnosed systemic inflammatory arthritis with a multifactorial etiology. There is a genetic susceptibility to RA with genetic associations, including human leukocyte antigens DR4 and DRB1.¹ Risk factors include older age, family history of RA, smoking, and female sex.¹ The pathogenesis of RA is not fully understood but it is thought to involve a combination of genetic and environmental factors. With RA, the immune system mistakenly attacks the synovial membrane of the joints, leading to inflammation and pannus formation. This leads to erosion of the cartilage and bone, resulting in joint destruction and loss of function.

CORRESPONDENCE:

Nicholas Averell, BS | gawash14@rowan.edu

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The traditional treatment options for RA include nonsteroidal anti-inflammatory drugs (NSAIDs) to alleviate symptoms, and disease-modifying antirheumatic drugs (DMARDs) to slow progression of the disease.¹ DMARDs include methotrexate,¹ which is considered first-line treatment, hydroxychloroquine,¹ sulfasalazine,² and biologic agents such as tumor necrosis factor (TNF)-alpha inhibitors (eg, etanercept, adalimumab, infliximab) or interleukin (IL)-6 inhibitors (eg, tocilizumab).³ These medications are effective in controlling inflammation and slowing progression of the disease; however, they can be associated with significant side effects, such as liver damage in the case of methotrexate⁴ and cardiotoxic cardiomyopathy in the case of hydroxychloroquine.⁵ In addition, some patients may not respond adequately to them. Active interventions, which involve guided exercises performed by the patient, play a crucial role in maintaining joint function and enhancing quality of life. These exercises are typically recommended as a part of a multifaceted treatment strategy, aiming to complement pharmacologic interventions and address the physical aspects of RA.

In recent years, there has been a growing interest in utilizing osteopathic manipulative medicine (OMM) as an adjunctive approach to managing RA. Nevertheless, it is crucial to note that the current body of literature evaluating effectiveness of OMM in RA is limited.⁸ This deficiency underscores the necessity for further deliberation and empirical investigation through clinical

trials to ascertain the potential utility of OMM in treating RA. While the biologic cause of RA is not yet fully understood, OMM aims to leverage the body's inherent capacity for self-regulation and healing. OMM involves physiologic processes such as lymphatic mobilization, which enhances circulation and potentially reduces inflammation by facilitating the removal of inflammatory mediators. It may also induce the expression of anti-inflammatory cytokines like IL-10, modulating the immune response and possibly decreasing autoimmune attacks on synovial membranes.

Additionally, OMM might influence hydration of the connective tissue matrix, which is crucial for maintaining its biomechanical properties and proper cell function, thus managing the stiffness and discomfort associated with RA.⁶ Although these mechanisms offer a plausible theoretical framework, the precise ways in which OMM/OMT (osteopathic manipulative treatment) affect RA are not fully elucidated, and more research is needed to confirm their relevance and efficacy in the context of RA—especially given the disease's complexity and the individualized approach of OMM/OMT. OMM includes many techniques that can be used to improve pain and signs of acute inflammation, such as limited range of motion (ROM) and muscle hypertonicity, and it has been useful in the treatment of osteoarthritis (OA).¹² This study investigated use of OMM in the management of RA and found that OMM can address the pain of arthritis, which may result from edema, muscle spasm, or reduced mobility.⁸

This report presents the case of a 56-year-old female patient with RA who was treated with OMM. The patient's case highlights the potential benefits of OMM in the management of RA, particularly in cases where traditional pharmacologic treatment options are not suitable or are declined by the patient. This case also highlights the importance of considering a patient's medical history, symptoms, and preferences while planning treatment. The purpose of this report is to present a specific case of a patient with RA treated with OMM techniques. The report aims to describe the patient's presentation, diagnosis, treatment, and outcome to highlight potential benefits and address gaps in the literature on use of OMM in management of RA.

PATIENT INFORMATION

A 56-year-old female presented with right wrist and finger pain, along with associated numbness, stiffness, and decreased ROM in the associated right wrist and fingers. The pain was usually 4/10 but had recently flared to 9/10. The patient has a past history of OA in both feet, hips, and lumbar spine. She was evaluated by rheumatology and was diagnosed with RA. She was offered methotrexate but declined due to its side effect profile. The patient was then offered Plaquenil (hydroxychloroquine) but is waiting for clearance from a cardiologist before beginning that medication.

The patient's prior medical history includes obesity, hypertension, RA, OA (both feet, hips, lower back), and myocardial infarction (MI) in 2019. Her prior surgical history includes stent procedure

(2019), cholecystectomy (2000), C-section (1995, 1998), and hernia repair and abdominoplasty (2002). With regard to family history, the patient's mother's medical history is significant for psoriatic arthritis.

Clinical Findings

The patient is currently taking metoprolol 25 mg daily, valsartan-hydrochlorothiazide 160/25, aspirin 81 mg daily, a multivitamin, alpha-lipoic acid, vitamin B6, and vitamin D. She has allergies to sucralose, morphine, and Demerol. The patient's past medical laboratory results are included below in Tables 1 and 2, covering previous blood work and X-ray results.

On review of systems, the patient reported no general symptoms such as fevers, chills, fatigue, or weakness. She reported no chest pain, palpitations, or lightheadedness. Further review of systems was negative for shortness of breath, cough, wheezing, or sputum production. A gastrointestinal review of systems was negative for nausea, vomiting, diarrhea, and constipation. The genitourinary review of systems was negative; no dysuria, hematuria, or incontinence was observed. The musculoskeletal review of systems was negative, showing positive joint stiffness (in the right wrist and hand) and negative joint swelling.

The patient was alert and oriented x3 on physical examination, with mild distress due to pain. Cardiovascular examination revealed regular rhythm, +S1/S2, no rubs/murmurs/gallops. Pulmonary examination revealed clear lungs on auscultation bilaterally (CTA B/L), no wheeze/rales/rhonchi. Gastrointestinal examination showed normal bowel sounds x4, nontender to palpation, and no hepatosplenomegaly. Musculoskeletal examination showed 5/5 right wrist muscle strength with extension eliciting pain and diminished ROM of right wrist and hand. Neurologic examination showed cranial nerves 1 to 12 were intact.

Osteopathic Examination

On osteopathic structural examination, the patient had OA FSRRL at C3 NSRRR, T4-7 SRRL, L2-4 SLRR, ribs 4 to 6 inhalation dysfunction on the left, right anterior innominate dysfunction, left on left somatic dysfunction, posterior radial head on the right, right wrist extension somatic dysfunction, and posterior tibial on talus. Based on the patient's history, symptoms, examination findings, and imaging studies, a diagnosis of RA was made.

Therapeutic Intervention

The patient was offered Plaquenil (hydroxychloroquine) as a treatment option but is waiting for clearance from a cardiologist before beginning the medication. During this time, the patient was treated with radiocarpal extension dysfunction (postisometric relaxation), counterstrain of the dorsal wrist, and high velocity, low amplitude (HVLA) of the posterior radial head dysfunction with a supination emphasis.¹⁰ The patient was then shown home exercises to perform daily to improve her ROM and wrist strength, including wrist curls, wrist rotations, and wrist extensions/flexions.

Follow-up and Outcomes

On 2-week follow-up, the patient noticed significant relief of wrist and hand symptoms after treatment and reported that her pain level had diminished to 0/10. Additionally, a few weeks later, she noted prolonged relief of symptoms in the time since. The patient will continue to be followed up with rheumatology and OMM for further management of her RA.

TABLE 1:

Labs (7/2021)

Immunoglobulin (Ig) G	1017
IgA	241
IgM	209
Total protein	7.0
Albumin	3.5
Alpha-1-globulin	0.3
Alpha-2-globulin	1.0
Beta-globulin	1.0
Gamma-globulin	1.1
M-spike	Not observed
Total globulin	3.5
Rheumatoid factor	26.3 high (repeat 29)
Anti-dsDNA antibodies	1
CCP antibodies	8
Sedimentation rate	56 (high)
Sjogren's	Anti SS-A <0.2, anti SS-B <0.2
<i>Saccharomyces cerevisiae</i>	IgG and IgA <20

TABLE 2:

Prior Imaging

X-ray of the hip (8/2022)	Right hip degenerative change at acetabulum
X-ray of the lumbar spine (8/2020)	Multilevel lumbar degenerative disc disease and spondylosis
X-ray of the feet (1/2022)	Degenerative OA in B/L feet

DISCUSSION

RA is a systemic chronic autoimmune condition that causes inflammation, pain, and stiffness in the joints and other areas of the body. This 56-year-old female patient presented with right wrist and finger pain, along with associated numbness, stiffness, and decreased ROM in the associated right wrist and fingers. The patient has a past history of OA in both feet, hips, and lumbar spine. She was evaluated by rheumatology for RA and was offered

methotrexate, but it was declined due to its side effect profile. The patient was then offered Plaquenil (hydroxychloroquine) but is waiting for clearance from a cardiologist before beginning the medication.

The patient's management course involved a combination of traditional pharmacologic treatment options and OMM techniques. Methotrexate, a common first-line treatment for RA, was declined by the patient due to its potential side effects, which can include liver damage, lung infections, and an increased risk of certain types of cancer. Plaquenil, another treatment option, was also declined by the patient, who is awaiting clearance from a cardiologist before starting the medication. During this time, the patient was treated with OMM techniques such as radiocarpal extension dysfunction (postisometric relaxation), counterstrain of the dorsal wrist, and HVLA of the posterior radial head dysfunction with a supination emphasis.¹⁰ After treatment, the patient reported significant relief of wrist and hand symptoms, and her pain level had diminished to 0/10. Additionally, a few weeks later, the patient noted prolonged relief of symptoms in the time since.

The significance of this case lies in the fact that it highlights the potential benefits of OMM techniques in the management of RA, particularly in cases where traditional pharmacologic treatment options are not suitable or are declined by the patient. It is also important to note that OMM can be utilized as a medium for reducing reliance on and, therefore, side effects of pharmacologic treatments of RA. Methotrexate, the first-line agent for RA, can result in severe side effects, including myelosuppression, hematotoxicity, nephrotoxicity, and pulmonary fibrosis, among others. If paired with its second-line agent, infliximab, patients can experience immunosuppression, putting them at alarming risk for infection. Additionally, it is worth noting that the patient's past medical history, including MI and hypertension, may have played a role in the decision to decline certain treatment options.

While this case shares similarities with previous research on use of OMM in the management of RA, the patient's past medical history, the specific OMM techniques used, and the patient's decision to decline certain medications makes it unique and adds to the current understanding of management of RA. However, it is important to note that OMM is not a cure for RA, and patients will need to continue to be followed up with rheumatology and OMM for further management of their condition.

PATIENT PERSPECTIVE

This report presents the perspective of a patient who was treated with OMM for her RA. The patient's perspective is an important aspect of this report, as it provides insight into the patient's rationale and emotional and physical experience.

This patient's perspective is presented through their own words, gathered during an interview conducted as part of the report research process. By including the patient's perspective in this report, we hope to provide a more comprehensive understanding of the impact of OMM treatment on patients and the importance of a patient-centered approach to care.

The patient stated:

“As a healthcare professional, I had a good understanding of the side effects and risks associated with traditional RA medications, and I knew that I wanted to explore other options before settling on a medication regimen. As an oncology nurse, I’ve seen methotrexate used for cancer patients numerous times and have seen a wide range of both the positive effects and adverse effects of the medication. Plaquenil was another medication offered for the management of my condition. Still, after having a recent heart attack, I was waiting to hear from my cardiologist before starting any medications that could potentially be cardiotoxic. I had heard from friends that OMM really helped them with their joint pain from OA and other conditions. I found an OMM practitioner who was comfortable in treating RA patients and started regular sessions. The results were nothing short of amazing. Within a few weeks of starting OMM treatment, I noticed a significant reduction in joint pain and stiffness and an improvement in my ROM. The OMM practitioner worked with me to identify areas of tension and stiffness in my body and target those areas with specific techniques to alleviate discomfort. One of the things I appreciated most about OMM was that it focused on treating the whole person, not just the disease. My practitioner took the time to listen to my concerns, and we worked together to develop a treatment plan that addressed my specific needs and lifestyle. My experience with OMM has given me a new perspective on the power of integrative medicine. I am grateful to have found a treatment option that has allowed me to manage my RA without relying on medication, and I am eager to share my experience with others who may be struggling with similar conditions.”

INFORMED CONSENT

In accordance with ethical and legal standards, informed consent was obtained from the patient prior to any procedures, treatments, or interventions. The patient was fully informed of the risks, benefits, and alternatives of the proposed treatment plan and had the opportunity to ask questions and clarify any concerns before providing their consent. The informed consent process was documented in the patient’s medical record. In addition to obtaining informed consent for any procedures, treatments, or interventions, the patient was fully informed of the report’s purpose, potential risks, and benefits. The patient provided written consent to allow their medical information to be used for educational or research purposes, including publishing a report. The patient had the opportunity to review the report and provide any input or feedback before giving their final consent. The process of obtaining informed consent for the report writing was also documented in the patient’s medical record.

CONCLUSIONS

This report highlights the potential advantages of OMM techniques in the treatment of RA, mainly when more conventional pharmaceutical options are ineffective or the patient declines them. The patient’s prior medical history, which included MI and hypertension, may have influenced the choice to forego some treatment possibilities. More research is required to assess OMM’s efficacy in the treatment of RA and to pinpoint the patient populations who will benefit from this therapeutic strategy.

Informed consent: Before participating in this study, the patient provided written informed consent. Nicholas Averell obtained paper consent from the patient to write and publish the report.

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