CASE REPORT

Chiropractic Care in the Management of Inactive Ankylosing Spondylitis: A Case Series

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ABSTRACT

Objective: This report describes chiropractic management for 3 cases of inactive ankylosing spondylitis (AS).

Clinical Features: A 25-year-old woman presented with chronic, mechanical neck pain and stiffness that was ultimately diagnosed as AS. A 23-year-old man presented with chronic low back and left hip pain that was diagnosed as AS. A 31-year-old man with low back pain presented with a known diagnosis of AS. Physical examination in 2 cases failed to identify systemic findings associated with AS. In the third case, examination revealed a history of ulcerative colitis. Laboratory examination of case 2 yielded a positive HLA-B27, but cases 1 and 3 were HLA-B27 negative. The acute reactants were negative in all 3 patients, indicating an inactive phase of disease. All 3 patients underwent spinal imaging including sacroiliac joint radiography. In case 3, magnetic resonance imaging of the sacroiliac joints was performed. All 3 imaging examinations revealed bilateral, symmetric sacroiliitis.

Interventions and Outcome: Patients were managed by both a medical rheumatologist and a doctor of chiropractic. Chiropractic care ranged from instrument-assisted spinal manipulation to diversified spinal and soft tissue manipulation and Cox flexion-distraction. Patients were given home stretches and rehabilitation exercises. All 3 patients experienced some relief of their symptoms including pain reduction and improved activities of daily living.

Conclusion: These 3 patients displayed differences and commonalities in clinical, laboratory, and imaging features. Chiropractic manipulation and rehabilitation seemed to be beneficial in reducing symptomatology and improving musculoskeletal function for these 3 patients. These findings suggest the potential for collaborative or integrative management in similar cases. (J Chiropr Med 2017;16:300-307)

Key Indexing Terms: *Ankylosing Spondylitis; HLA-B27 Antigen; Radiology; Chiropractic; Spinal Manipulation*

INTRODUCTION

Ankylosing spondylitis (AS) is a seronegative inflammatory spondyloarthropathy that affects 0.1%-1.4% of the young adult population.[1,2] Diagnostic characteristics of inflammatory back pain include an age of onset <45 years, a duration >3 months, insidious onset, morning stiffness lasting >30 minutes, improvement of symptoms with movement, no improvement of symptoms with rest, night pain, and alternating buttock pain.[2] Clinical manifestations most commonly include inflammatory back pain, but manifestations affecting the eye, gastrointestinal tract, skin, peripheral joints, heart, lung, and kidney are seen.[3] Osteoporosis is also another feature of the disease.[4] Radiographic examination is the most common imaging modality used in the diagnosis of AS. Diagnostic ultrasound (US), magnetic resonance imaging (MRI), bone scintigraphy, and dual-energy x-ray absorptiometry may be used to aid in the diagnosis or gauge treatment effectiveness.[4-12] Biomarkers are utilized in the workup of AS. Human leukocyte antigen B27 (HLA-B27) (90%-95%) and endoplasmic reticulum aminopeptidase 2 (ERAP2) are a few genetic markers.[5,13] Erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) are acute reactants that help gauge disease activity, as inflammatory arthropathies, including AS, are known to periodically become inactive with persistence of pain, including nociceptive inputs from the joints, muscles, and fascia.[14-17] Treatment using tumor necrosis factor-α (TNF-α) inhibitors and nonsteroidal inflammatory drugs (NSAIDs) are typical pharmaceutical interventions used to reduce pain and halt progression of this

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disease.[18] Only a few case reports have been described using chiropractic manipulation in addition to rehabilitation and supplementation as a treatment for AS.[19-24] The objective of our case series was to describe clinical and imaging diagnostic characteristics in AS and how chiropractic care may be included in integrative care.

Case Series

Case 1

A 25-year-old woman presented with neck and upper back pain and stiffness for a reported duration of 3 months. She rated the pain as 8 of 10, where 0 represents the absence of symptoms and 10 the most severe, unbearable pain on the verbal pain scale. The patient described the presenting complaint as a dull ache with sharp pain at end range of motion and overall general stiffness of the cervical and thoracic spine. She described feeling the pain and stiffness throughout the entire day, with worsening of symptoms by the end of the day that was aggravated by all ranges of motion and exercise. The symptoms were relieved by rest, heat, ice, and NSAIDs.

Physical examination revealed a moderate to severe global reduction in all cervical ranges of motion, the worst being lateral flexion bilaterally. Orthopedic tests, including cervical maximum compression, foraminal compression, shoulder depression, and Spurling test, were positive for localized cervical pain without radicular symptoms. There was bilateral hypertonicity of the scalene, sternocleidomastoid, levator scapulae, upper trapezius, erector spinae, and pectoralis major muscles. Neurologic examination was normal.

The global reduction in cervical ranges of motion prompted radiographic examination of the cervical spine, which revealed osteopenia of the articular pillars with indistinct cortical margins throughout the zygoapophyseal joints bilaterally (Fig 1). Some of the apophyseal joint cartilage was visualized; however, there was severe reduction in sagittal plane range of motion (Fig 1). The intervertebral disk spaces were well maintained. A differential diagnosis of juvenile idiopathic arthritis leading to early-onset adult osteoarthritis versus ankylosing spondylitis was given, and an arthritide laboratory panel was recommended, including RA factor, CRP, ESR, and HLA-B27.

The arthritide laboratory panel revealed that the patient was antinuclear antibody (ANA) positive and RA factor and HLA-B27 negative. The ESR and CRP were within normal limits. Based on the imaging and laboratory findings, an inflammatory arthropathy, possibly inactive AS, was considered.

A treatment plan of 3 times per week for a month was established for myospasms and joint restrictions. The patient received manipulation of the full spine using an instrument-assisted mobilization device. Soft tissue manipulation techniques and interferential electric stimulation at 80-120 Hz for 10 minutes (LSI International, Kansas City, Kansas) were employed to reduce paraspinal hypertonicity and pain. The patient was given at-home range of motion exercises and stretches to be completed 3 times per day. To reduce systemic inflammation, omega-3 supplementation (1330 mg/d) was prescribed, and she was advised to avoid processed foods, increase fruit and vegetable intake, and increase water intake.

Four months after initial examination, a new complaint emerged consistent with right SI joint pain rated 5 of 10 on a verbal pain scale. The physical examination revealed a normal to mild decrease in range of motion in all directions. All orthopedic tests were negative, except for Kemp's test, which elicited pain in the right SI joint. In the light of the SI joint complaint, in combination with the cervical spine diagnosis, these findings elevated concern for AS.

A radiographic examination of the lumbar spine and SI joints revealed squaring of the vertebral bodies, particularly of the thoracolumbar and lower lumbar spine, and sclerosis and mild erosions of the SI joints, consistent with bilateral grade II sacroiliitis (Fig 2). A diagnosis of early-stage

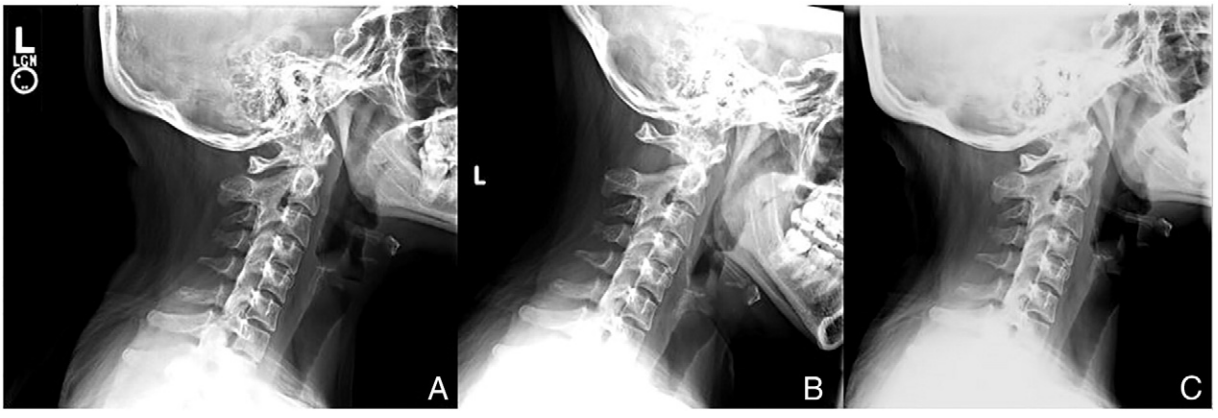

Fig 1. *(A) Radiographic examination of the cervical spine in case 1 revealed indistinct cortical margins and osteopenia of the articular pillars. The apophyseal joints were diminished, predominately in the mid to lower cervical segments, whereas the intervertebral disk spaces were well maintained. (B) Flexion and (C) extension revealed restricted sagittal range of motion of the cervical spine.*