



Cranial Treatment and Spinal Manipulation for a Patient With Low Back Pain: A Case Study



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Abstract

Objective: The purpose of this case study is to present chiropractic management of a patient with chronic low back pain by focusing on the craniomandibular system.

Clinical Features: A 37-year-old man consulted a chiropractor for pain in the lumbosacral area with radiation down the anterolateral side of the upper left leg. The symptoms started after a fall the previous year. Examination showed a post-traumatic chronic L4-L5 facet dysfunction and left sacro-iliac joint dysfunction. Chiropractic spinal manipulation to the lumbar spine and pelvis gave only temporary relief from the pain.

Intervention and Outcome: A year later a bone scintigraphy was conducted, in which a lesion was found over the right sphenoid area. Cranial treatment of this area was added to the chiropractic treatment plan. After this treatment, the patient reported that he was pain free and could return to normal activities of daily living.

Conclusion: The clinical progress of this case suggests that for some patients, adding cranosacral therapy may be helpful in patients with low back symptoms.

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Introduction

Chronic low back pain is a common problem and its prevalence has increased to around 10% in the last decade.^{1,2} In about 10% of patients, the primary pain generator is not found in the spine or directly related area.³

Cranio-mandibular disorders may affect 10% to 40% of the general population within their lifetime and

associations to other disorders, such as postural disorders, lumbosacral pain, cervical spine disorders and general musculoskeletal symptoms have been found.^{4–7} Fink et al found that simulated dysfunction of the craniomandibular system caused functional abnormalities in the sacro-iliac joint.⁸ Fischer et al also found a strong correlation of craniomandibular dysfunction in patients with complex regional pain syndrome restricting hip motion.⁷ Their theory is that the central nervous system allows information (including nociceptive information) to be communicated between the temporomandibular joint and the rest of

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the body, since the afferent inputs from the periphery converges on the neurons of the spinal or trigeminal dorsal horns. Evidence suggests that input at brainstem level may play a role in trigeminal motor function, therefore this may explain the influence of the craniomandibular system on the body.⁷

Few case reports describe the treatment of a patient with low back pain receiving benefit from cranosacral therapy. The purpose of this study was to present a case describing treatment of the sphenoid area as part of the craniomandibular system for a patient not responding to traditional spinal manipulation for low back pain.

Case Report

A thirty-seven year old professional soldier presented with low back pain (LBP) in the lumbosacral region. The pain presented bilaterally, but mostly on the left side. The low back pain radiated down the anterolateral side of the upper left leg when walking for long periods of time.

The symptoms started directly after an accident a year before consultation. The patient fell from a height of around 3 m landing on his back and head. He was rendered unconscious for a short time directly after the incident, dislocated a finger and he experienced neck pain with pain both in the mid-back and low back regions. For the first 5 days after the fall he used a neck brace. A radiological examination was conducted immediately following the incident and again a year later with no evidence of any fracture. The low back pain was aggravated by sitting, standing, lying down, walking, bending over and cycling. The low back pain improved with periodic posture changes and some light exercising such as short walks and cycling. Coughing and sneezing had no influence over the symptoms. Medical history was unremarkable apart from extraction of teeth in 1997, which involved getting removable partial dentures and a bridge.

During the first visit's physical examination, visual inspection of the posture revealed a lower right rim of the ilium compared to the left side, lower right shoulder and bilateral pes planus. Active range of motion of the lumbar spine was restricted in extension, and restricted with pain in both forward flexion and right lateral flexion. Straight Leg Raise gave pain in the low back on the left at 50° and tension in the medial right hamstrings at 70°. Kemp's test was positive on the left. The reflexes of S1, L5 (both prone) and L4 (patient supine) were performed and were asymmetrical: on the

right side they were hyperreflexic (+3), on the left hyporeflexic (+1). Dermatomes in the legs were tested by pin prick and soft touch (cotton wool) and were found normal.

Palpation of the spine was performed, both static and motion palpation. Motion palpation was performed with the patient seated. Static palpation was performed with the patient standing, sitting and prone. There was restricted movement at T3-T8 bilaterally, at L4-5-S1 on the right and L5-S1 on the left in right rotation (and lateroflexion). There was hypertonicity of the m. erector spinae in the lumbar region and the left gluteal musculature around the left sacro-iliac (SI) joint. The SI-joint dysfunction was further confirmed by a positive left Yeoman's test. Further orthopaedic and neurological examination was without abnormalities.

The initial working diagnosis was post-traumatic chronic L4-L5 facet dysfunction and left SI dysfunction associated with hypertonicity of the left gluteal and erector spinae musculature.

The patient was treated with Cox flexion (flexion movement of the lumbar spine while holding the spinous process of L5) with lateral flexion and distraction techniques. During treatment other high velocity-low amplitude chiropractic adjusting techniques were also used in the pelvis and the lumbar spine. Trigger point therapy was used on the left gluteal musculature. No further chiropractic adjusting technique was used elsewhere. Throughout the treatment the symptoms slowly resolved. From the 7th visit the patient came in every three weeks, after which he would be pain-free for 2 weeks. Then the pain would gradually return to its previous state. To increase the stability of the low back, the patient was given abdominal strengthening exercises, lumbar flexion/extension exercises, quadruped arm/leg raise and squat exercises. He also received physiotherapeutic treatments, in which he did similar exercises but under guidance. This worsened his LBP at first, but after adaptation of the exercises the symptoms did not improve either. The patient stopped with the exercises because of lack of improvement.

Since the complaint did not resolve in the year after the incident, the (military) medical service conducted a bone scintigraphy to exclude serious pathology caused by the incident, since this happened during work time. A focal lesion was discovered over the right sphenoid and sphenoid sinus (Figure 1). These lesions are areas with an increased accumulation of radioactive material, indicating a metabolically active process. Sinus pathology can be a reason for this focal lesion, but the patient did not suffer from sinus problems, leaving no

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