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Influence of the Temporomandibular Joint on Hip Joint Range of Motion in Patients With CRPS

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Objective: This study evaluated if patients with complex regional pain syndrome (CRPS) would have an increase in range of motion (ROM) after myofascial release and a similar ROM decrease after jaw clenching, whereas in healthy subjects these effects would be minimal or nonexistent.

Methods: Documentation of patients with CRPS (n = 20) was established using the research diagnostic criteria for CRPS, questionnaires, average pain intensity for the past four weeks, and the temporomandibular index (TMI). Healthy subjects (n = 20, controls) also underwent the same testing. Hip ROM (a angle) was measured at three time points as follows: baseline (t1), after myofascial release of the temporomandibular joint (t2), and after jaw clenching for 90 seconds (t3). Comparison of the CRPS and control groups was made using t tests.

Results: Mean TMI total score and mean pain reported for the last four weeks were significantly different between the two groups ($P < .0005$). Hip ROM at t1 was always slightly higher compared to t3, but t2 was always lower in value compared to t1 or t3 for both groups. The differences of all hip ROM values between the groups were significant ($P < .0005$). Moreover, the difference between t1 or t3 and t2 was significantly different within the CRPS group (t1 = 48.7*; t2 = 35.8*; $P < .0005$).

Conclusions: The results suggest that temporomandibular joint dysfunction plays an important role in the restriction of hip motion experienced by patients with CRPS, which indicated a connectedness between these two regions of the body.

Comparing Two Types of Spinal Manipulation and Minimal Conservative Medical Care for Adults 55 and Older

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Objective: Chiropractic care is used by many older patients for low back pain (LBP), but there are no published results of randomized trials examining spinal manipulation (SM) for older adults. The purpose of this study was to compare the effects of two biomechanically distinct forms of SM and minimal conservative medical care (MCMC) for participants at least 55 years old with subacute or chronic nonradicular LBP.

Methods: Randomized controlled trial. The primary outcome variable was low back-related disability assessed with the 24-item Roland Morris Disability questionnaire at 3, 6, 12 and 24 weeks. Participants were randomly allocated to six weeks of care including 12 visits of high-velocity, low-amplitude (HVLA)-SM, low-velocity, variable-amplitude (LVVA)-SM, or three visits of MCMC.

Results: Two hundred forty participants (105 women and 135 men) ages 63.1 +/- 6.7 years without significant comorbidities. Adjusted mean Roland Morris Disability change scores (95% confidence intervals) from baseline to the end of active care were 2.9 (2.2, 3.6) and 2.7 (2.0, 3.3) in the LVVA-SM and HVLA-SM groups, respectively, and 1.6 (0.5, 2.8) in the MCMC group. There were no significant differences between LVVA-SM and HVLA-SM at any of the end points. The LVVA-SM group had significant improvements in mean functional status ranging from 1.3 to 2.2 points over the MCMC group. There were no serious adverse events associated with any of the interventions.

Conclusions: Biomechanically distinct forms of SM did not lead to different outcomes in older LBP patients and both SM procedures were associated with small yet clinically important changes in functional status by the end of treatment for this relatively healthy older population. Participants who received either form of SM had improvements on average in functional status ranging from 1.0 to 2.2 over those who received MCMC. From an evidence-based care perspective, patient preference and clinical experience should drive how clinicians and patients make the SM procedure decision for this patient population.

Chiropractic and Medical Prophylactic Treatment of Adults With Tension-Type Headache

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Objectives: Tension-type headache (TTH) is the most common headache experienced by adults in Western society. Only two clinical trials of spinal manipulation for adult tension-type headache have been reported, neither of which was fully controlled. In one trial, spinal manipulation was compared to amitriptyline. There is an urgent need for well-controlled studies of chiropractic spinal manipulation for TTH.

This trial was stopped prematurely due to poor recruitment. The purposes of this report are (1) to describe the trial protocol, as it contained several novel features, (2) to report the limited data set obtained from our sample of completed subjects, and (3) to discuss the problems that were encountered in conducting this study.

Methods: A randomized clinical trial was conducted with a factorial design in which adult TTH sufferers with more than 10 headaches per month were randomly assigned to four groups: real cervical manipulation + real amitriptyline, real cervical manipulation + placebo amitriptyline, sham cervical manipulation + real amitriptyline, and sham cervical manipulation + placebo amitriptyline. A baseline period of four weeks was followed by a treatment period of 14 weeks. The primary outcome was headache frequency obtained from a headache diary in the last 28 days of the treatment period.

Results: Nineteen subjects completed the trial. In the unadjusted analysis, a statistically significant main effect of chiropractic treatment was obtained (-2.2 [-10.2 to 5.8], P = .03) which was just below the three-day reduction set for clinical importance. As well, a clinically significant effect of the combined therapies was obtained (-9 [20.8 to 2.9], P = .13), but this did not achieve statistical significance. In the adjusted analysis, neither the main effects of chiropractic nor amitriptyline were

statistically significant or clinically important; however, the effect of the combined treatments was -8.4 (-15.8 to -1.1) which was statistically significant (P = .03) and reached our criterion for clinical importance.

Conclusion: Although the sample size was smaller than initially required, a statistically significant and clinically important effect was obtained for the combined treatment group. There are considerable difficulties with recruitment of subjects in such a trial. This trial should be replicated with a larger sample.

Changes in Neck Mobility and Pressure Pain Threshold Levels Following Cervical Myofascial Induction

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Objective: The purpose of this study was to investigate if the application of a cervical myofascial induction technique targeted to the ligamentum nuchae resulted in changes in cervical range of motion and pressure pain thresholds (PPT) in asymptomatic subjects.

Methods: Thirty-five subjects, eight men and 27 women (mean age, 21 +/- 4 years), without a current history of neck, shoulder, or arm pain participated. Participants were randomly divided into two groups: the experimental group, which received a real cervical myofascial induction technique, and the control group, which received a sham-manual procedure.

Bilateral PPT levels over C5-C6 zygapophyseal joints and tibialis anterior muscles and neck mobility were assessed preintervention and 5 minutes postintervention by an assessor blinded to the treatment allocation of the subject. Separate mixed-model analyses of variance were used to examined the effects of the treatment on neck mobility and PPT levels as the dependent variable, with group (experimental or control) as the between-subjects variable and time (pre-post test) or side (dominant, nondominant) as the within-subjects variable. The hypothesis of interest was the group x time interaction at an a priori a level equal to .05.

Results: The group x time interaction was statistically significant for cervical flexion (F = 5.4; P = .03), extension (F = 3.3; P = .045), and left lateral-flexion (F = 4.6; P = .04), but not for right lateral-flexion (F = 2.5; P = .1), right rotation (F = 0.5; P = .5), and left rotation (F = 0.09; P = .2). Subjects receiving the real cervical myofascial induction technique experienced greater improvement in cervical mobility when compared with the control group. The group x time interaction did not reveal any significance for PPT in the C5-C6 zygapophyseal joints (F = 0.5; P = .5) and in the tibialis anterior muscle (F = 0.2; P = .8).

Conclusions: The application of a cervical myofascial induction technique resulted in an increase in cervical flexion, extension, and left lateral-flexion, but not rotation motion in a cohort of healthy subjects. No changes in PPT in either C5-C6 zygapophyseal joint (local point) or tibialis anterior muscle (distant point) were found.

Spontaneous Cervical Epidural Hematoma Masquerading as an Abscess on MRI Scan

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Objective: The aims of the study are to describe a case of spontaneous spinal epidural hematoma (SSEH) without any predisposing factors and magnetic resonance imaging (MRI) features of epidural abscess and to highlight the importance of high clinical suspicion.

Clinical Features: A 75-year-old male presented to the emergency department after a severe neck pain. He progressively showed sensory and upper motor signs on the left side of the body. The MRI scans were suggestive of cervical epidural abscess with peripheral enhancement of the lesion.

Interventions and Outcomes: He underwent a multiple level (C3-T1) laminectomy when he was found to have an SSEH. There has been no history of trauma or other predisposing factor, and presence of arteriovenous malformation was ruled out by MR angiography.

Conclusions: The MRI features of SSEH may be misleading and mimic other spinal lesions such as abscess. Presence of tapering superior and inferior margins, spotty Gadolinium enhancement in the mass, along with abrupt clinical onset of pain and neurologic deficit, should raise the suspicion toward epidural hematoma. Enhancement in the hyperacute stage of the hematoma itself might indicate continued bleeding and, in the case of deteriorating neurologic status, will necessitate decompression.

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