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Editorial Staff

Utilization of cervical spine manipulation under anesthesia for management of cervical disc herniation, cervical radiculopathy, and associated cervicogenic headache syndrome. James Herzog,DC,DABCO.

Objective: To demonstrate the benefits of cervical spine manipulation under anesthesia as an approach to treating a patient suffering from chronic cervical disc herniation, associated cervical radiculopathy and cervicogenic headache syndrome.

Clinical Features: The patient suffered neck pain with radiating paresthesia into the right upper extremity and incapacitating headaches, and had no response to six months of conservative therapy. Treatment had included spinal manipulative therapy, physical therapy, anti-inflammatory medication and acupuncture. MRI, EMG, and SSEP examination all revealed positive diagnostic findings.

Intervention and Outcome: Treatment included three successive days of cervical spine manipulation under anesthesia. The patient had immediate relief following the first procedure.

Her neck and arm pain were reported to be 50% better after the first trial, and her headaches were better by 80% following the third trial. Four months following the last procedure the patient reported a 95% improvement in her overall condition.

Conclusion: Cervical spine manipulation under anesthesia has a place in the chiropractic arena. It is a useful tool for treating of chronic discopathic disease complicated by cervical radiculopathy and cervicogenic headache syndrome. The beneficial results of this procedure are contingent upon careful patient selection and proper training of qualified chiropractic physicians.

Key Indexing Terms: Chiropractic Manipulation; Anesthesia; Intervertebral Disc Herniation; Cervical Vertebral.

Why yet another diagnostic sign of sacroiliac movement restriction? Karel Lewit,MD,Dr.Sc., and Alois Rosina.

Background: Poor results of inter- and intra-examiner reliability of movement palpation tests for sacroiliac (SI) movement restriction are found in the literature.

Objective: To analyze current diagnostic techniques for movement palpation. The most evident sources of error and technical pitfalls are detailed.

Method: A random sample of 64 consecutive patients at a university hospital, in and out patients

were examined using the new technique, which was compared with a set of the above given techniques before and after treatment.

Results: There was full agreement except in two cases where head rotation was restricted and in two cases of severe scoliosis. The interexaminer reliability of the new test between two independent (blinded) examiners in 33 patients (66 joints) was, agreement in 82%, disagreement in 18% (0.68 kappa).

Conclusion: For its simplicity and lack of possible errors, this is a valuable sign. Its mechanism, however, is poorly understood.

Key Indexing Terms: Diagnosis; Sacroiliac Joint; Palpation.

Sacroiliac joint diagnostics in the Hamburg construction workers' study. Ren Toussaint,MD, Christian Gawlik,MD, Uwe Rehder,MD, and Wolfgang Ruther,MD.

Background: In the medical literature the test procedures for sacroiliac joint diagnostics is viewed as controversial. The provocation tests being based on provoked sacroiliac pain, whilst the palpation tests examine the motion of the sacroiliac joint or describe the condition indirectly if there is a limitation of the sacroiliac function. It must be presumed that the use of different tests results in the detection of varying functional phenomena of a sacroiliac dysfunction or, alternatively, that identical effects of a dysfunction are evaluated in differing ways.

Objective: This paper presents results with regard to the consistency of tests for sacroiliac joint dysfunctions carried out on participants from the building trade.

Design and Participants: The consistency of the tests (standing flexion test, spine test, iliac compression test, iliac springing test) employed in a cross-section investigation of a cohort of 480 male construction workers is presented. To evaluate the degree of consistency of the test procedure the percental agreement and the kappa value, including a confidence interval of 95 per cent, is given.

Results: The consistency between the iliac compression test and the three sacroiliac palpation tests could not be shown to be statistically significant. The consistency between the three palpation was moderate to good and the percental agreement was acceptable (87.4, 88.6, 80.9 percent).

Conclusions: It may be assumed that the palpation tests characterize the same dysfunction of the sacroiliac joint. Standing flexion test, spine test and iliac springing test seem to be valuable tools for sacroiliac joint diagnostics.

Key Indexing Terms: Sacroiliac Joint; Diagnosis; Low Back Pain.

Sacroiliac dysfunction in construction workers. Ren Toussaint, MD, Christian Gawlik,MD, Uwe Rehder,MD, and Wolfgang Ruther,MD.

Background: In the literature of manual medicine, the sacroiliac joint is widely accepted as a potential source of low back pain. On the other hand some investigations have detected sacroiliac joint dysfunction without concomitant low back pain. The prevalence of sacroiliac dysfunction in the population has been noted in the medical literature as between 19.3-47.9%). However, the

prevalence of sacroiliac dysfunction in the general population and for construction workers are unknown.

Objective: This article presents results from the Hamburg construction workers study in respect of sacroiliac diagnostics. The prevalence of and the connection between sacroiliac dysfunction and low back pain are particularly interesting.

Design and Participants: The sacroiliac joint diagnostics was studied in a cross-section investigation of a cohort of 480 male construction workers. Manual examination is the standard in the diagnostics of sacroiliac joint conditions at present. The assessment of sacroiliac joint function by standing flexion test, the spine test, the iliac compression test, and the iliac springing test was operationalized as two categories "sacroiliac dysfunction I and II."

Results: A prevalence of 29 percent was found for dysfunction I and 6.3 percent for dysfunction II, while a prevalence of 7.9 percent was found for the co-prevalence of low back pain on the day of examination and sacroiliac dysfunction. This study demonstrated no statistical associations between low back pain and sacroiliac joint dysfunction.

Conclusions: The reason why there are symptomatic and asymptomatic sacroiliac dysfunctions has not yet been sufficiently elucidated. The identification of pain provoking factors should be the aim of subsequent investigations. A further study with a prospective design will be necessary to answer the questions which remain open.

Key Indexing Terms: Sacroiliac Joint; Low Back Pain.

The rationale for assessing the effects of manipulative therapy on autonomic tone by analysis of heart rate variability. Alex Eingorn,DC, George Muhs,DC,DACNB,CCN.

Background: For over 100 years, chiropractors have asserted that overall health can be improved through the use of spinal manipulative therapy (SMT). The autonomic nervous system (ANS) is known to control and regulate all involuntary physiological activities by controlling the activities of the internal organs, glands, and circulation. Recent studies document a potential relationship between the vertebral subluxation complex (VSC), autonomic tone, and cardiac function.

Objective: This discussion reviews how it is possible to use heart rate variability analysis to calculate a quantitative index of autonomic function which accurately reflects the sympathetic and parasympathetic tone as well as the sympathovagal balance.

Discussion: The technique of heart rate analysis known as heart rate variability (HRV) could be extremely useful in assessment of treatment outcomes in clinical chiropractic practice. Currently, HRV is in widespread use in the fields of neurology, cardiology, psychology, psychophysiology, obstetrics, anesthesiology and psychiatry.

Conclusion: Further studies in this area may lead to a better understanding of the effects of spinal manipulation on (a) the general health of an individual; (b) an individual's susceptibility to lowered immunity and recuperative capacity; (c) conditions which lie outside the scope of musculoskeletal therapeutics and are more in line with classical chiropractic concepts. This can also contribute to a more well informed interprofessional cooperation between allopathic and chiropractic health care providers.

Key Indexing Terms: Autonomic Nervous System; Vagus Nerve; Chiropractic Manipulation.

A patient-specific approach for measuring functional status in low back pain. Anna Beurskens,PT,PhD, Henrica de Vet,PhD, Albere Koke,PT, Eline Lindeman,PhD, Geert van der Heijden,PT,PhD, Wiel Regtop,PT, and Paul Knipschild,PhD.

Background: Activities and their importance for daily living vary widely between patients. Patient-specific measurement of functional status means that the evaluation is focussed on activities that an individual patient selected as main complaints.

Objective: To develop and evaluate a patient-specific approach for measuring functional status in low back pain.

Study Design: A cohort of 150 patients was measured at baseline and 12 weeks later.

Methods: The feasibility of the patient-specific approach was evaluated in patients with non-specific low back pain. We used effect size statistics to evaluate responsiveness in terms of sensitivity to change and specificity to change.

Results: The selection procedure for the main complaint was feasible but labor-intensive. The patient-specific approach was able to detect changes on complaints that were highly relevant for the patients. The patient-specific approach appeared to be more sensitive to change but less specific to change compared to other instruments.

Conclusions: On the basis of this study it would be valuable to apply the patient-specific approach in future studies, also with the aim of further evaluation. In the meantime, a number of practical problems of the method need to be resolved.

Key Indexing Terms: Low Back Pain; Responsiveness; Patient Preference; Functional Assessment; Activities of Daily Living.

Decrease in quadriceps inhibition after sacroiliac joint manipulation in patients with anterior knee pain. Esther Suter,PhD, Gordon McMorland,DC, Walter Herzog,PhD, and Robert Bray,MD.

Background: There is evidence that conservative rehabilitation protocols fail to achieve full recovery of muscle strength and function after joint injuries. The lack of success has been attributed to the high amount of muscle inhibition (MI) found in patients with knee joint pathologies. Clinical evaluation shows that anterior knee pain (AKP) is typically associated with SI joint dysfunction, which may contribute to the MI observed in this patient group.

Objective: To assess if SI joint manipulation alters MI and strength of the knee extensor muscles in patients with AKP.

Design and Setting: The effects of SI joint manipulation were evaluated in patients with AKP. The manipulation consisted of a high-velocity low amplitude thrust in the side-lying position, aimed at correcting SI joint dysfunction. Before and after the manipulation, torque, MI and muscle activation for the knee extensor muscles were measured during isometric contractions using a Cybex dynamometer, muscle stimulation and electromyography, respectively.

Participants: Eighteen patients (mean age 30.5 +/- 13.0 yrs) with either unilateral (n=14) or bilateral (n=4) AKP.

Results: Patients showed substantial MI in the involved and the contralateral legs as estimated by the interpolated twitch technique. Following the manipulation, a decrease in MI and increases in knee extensor torques and muscle activation were observed, particularly in the involved leg. In patients with bilateral AKP, MI was decreased in both legs following SI joint adjustment.

Conclusions: Spinal manipulation might offer an interesting alternative for treatment of patients with anterior knee pain and MI. Since this clinical outcome study was of descriptive nature rather than a controlled design, biases might have occurred. Thus, the results have to be verified in a randomized, controlled, double-blinded trial before firm conclusions can be drawn or recommendations can be made.

Key Indexing Terms: Manipulation; Chiropractic; Knee Pain; Muscle Inhibition; Electromyography.

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