Dynamic Chiropractic

WHIPLASH / NECK PAIN

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Editorial Staff

The benefits outweigh the risks for patients undergoing chiropractic care for neck pain: a prospective, multicenter, cohort study.

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Objective: This study describes both positive clinical outcomes and adverse events in patients treated for neck pain by a chiropractor.

Methods: This study was a prospective, multicenter, observational cohort study. Patients with neck pain of any duration who fulfilled the inclusion criteria were recruited in a practice-based study. Data were collected on the patients and from the chiropractors at baseline, the first 3 visits, and at 3 and 12 months. Clinical outcome measures included (1) neck pain in the 24 hours preceding the visit, (2) neck disability, (3) treatment satisfaction, (4) global assessment, and (5) adverse events. *Recovery* was defined as "completely improved" or "much better" using the global assessment scale. An *adverse event* was defined as either a new related complaint or a worsening of the presenting or existing complaint by >30% based upon an 11-point numerical rating scale.

Results: In all, 79 chiropractors participated, recruiting 529 subjects, representing 4,891 treatment consultations. Follow-up was possible for 90% and 92%, respectively, at 3 and 12 months. Most patients had chronic, recurrent complaints; mild to moderate disability of the neck; and a mild amount of pain at baseline; and two-thirds had sought previous care for the presenting complaint in the preceding 6 months. Adverse events after any of the first 3 treatments were reported by 56% and 13% of the study population reported these events to be severe in intensity. The most common adverse events affected the musculoskeletal system or were pain related, whereas symptoms such as tiredness, dizziness, nausea or ringing in the ears were uncommon (<8%). Only 5 subjects (1%) reported to be much worse at 12 months. No serious adverse events were recorded during the study period. Of the patients who returned for a fourth visit, approximately half reported to be recovered, whereas approximately two-thirds of the cohort were recovered at 3 and 12 months.

Conclusion: Adverse events may be common, but are rarely severe in intensity. Most of the patients report recovery, particularly in the long term. Therefore, the benefits of chiropractic care for neck pain seem to outweigh the potential risks.

Consent: its practices and implications in United Kingdom and United States chiropractic practice.
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Objective: This study explores the implementation of consent procedures in a sample of chiropractors in the United Kingdom (UK) and the United States (U.S.) and how well they satisfy the core ethical principles of autonomy, veracity, justice, nonmaleficence, and beneficence.

Methods: A precoded questionnaire was sent to 500 geographically stratified, randomly selected chiropractors in the UK and 500 similarly selected chiropractors within 10 states (50 from each) across the U.S. Questionnaires were dispatched 100 per month over a 5-month period. Nonresponders were followed up twice. Quantitative data were analyzed descriptively. Qualitative data were charted and examined for emergent themes.

Results: The overall response rate was 35% (346 of 1,000), equating to 23% (n = 117) of the U.S. and 46% (n = 231) of the UK cohort. Results suggest chiropractors view consent as an event rather than a process and revealed important omissions in key areas. Reasons specified for the nondisclosure of risk have important negative implications on the principles of autonomy, veracity and justice, whereas paternalistic tendencies are indicative of tension between beneficence and paternalism.

Conclusion: Results from this survey suggest a patient's autonomy and right to self-determination may be compromised when seeking chiropractic care. Difficulties and omissions in the implementation of valid consent processes appear common, particularly in relation to risk. Practitioners felt that a serious adverse event occurred so infrequently that this, coupled with a lack of convincing evidence regarding the risk associated with certain treatment, rendered the routine discussion of major risk unnecessary.

Effectiveness of traditional bone setting in chronic neck pain: randomized clinical trial.
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Objective: This study evaluates the effectiveness of traditional bone setting (TBS) in chronic neck pain (cNP) compared with conventional physiotherapy (PT) and massage (M).

Methods: This was a randomized clinical trial. Working-age, employed subjects with cNP (n = 105; 37 men and 68 women; mean age, 41.5 years) were randomized into TBS, PT, and M groups. Follow-up times were 1, 6 and 12 months after the treatments. Neck pain intensity (visual analog scale), perceived disability [Neck Disability Index (NDI)], and neck spine mobility measurements were used as outcomes. Global assessment was evaluated by the subjects (scale from −1 to +10). Data were analyzed using time (pre and post) by group (TBS, PT and M), two-way analysis of variance for repeated measures.

Results: Neck pain decreased and NDI scores improved in all groups 1 month after the treatment ($P < .001$). The improvement of NDI and persons' satisfaction were significantly better after TBS. Neck spine mobility in rotation movements tended to improve significantly better and the front-knee distance improved more after TBS. One year later, both NDI and neck pain were significantly better after TBS than in reference groups. A significant improvement was reported by 40% to 45.5% of subjects in the PT and M groups and by 68.6% in the TBS group. Bone setters' ability to communicate and to interact with patients was evaluated significantly higher. In the TBS group, the number of sick days was minimal as was the use of painkillers during 1-year follow-up compared to that in the reference groups.

Conclusions: Traditional bone setting, which is a soft manual mobilization technique focusing on the muscles, joints, and ligaments, appears to be effective in cNP. Two-thirds of subjects experienced it as beneficial, and it seems to be able to improve disability and pain in patients with cNP. Subjective and partially objective benefits of TBS were found in those patients more than after other interventions, and the effects lasted at least for 1 year.

Three-dimensional manual contact force evaluation of graded perpendicular push force delivery by second-year physiotherapy students during simple feedback training.

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Objective: The purpose of this study was to investigate a quantitative biomechanical evaluation method for contact forces exerted during a manual examination and treatment technique used in a learning environment. The evaluation was based on three-dimensional (3D) force component data.

Methods: A hand/palm held computerized 3D force component measuring system was used during a simple feedback experiment involving 20 second-year university students of physiotherapy who delivered 5 sets of graded perpendicular manual push forces on the sensor part of the system, which was placed on the padded surface of an examination/treatment table. In an effect study with a multiple time-series design, a randomly chosen subgroup of subjects received concurrent visual 3D kinetic/dynamic force-time feedback.

Results: The students delivered graded perpendicular forces with good intrasubject consistency (intraclass correlation coefficient [3, 1]: mean, 0.80; range, 0.76-0.88), but with poor intersubject consistency (intraclass correlation coefficient [2, 1]: mean, 0.38; range, 0.15-0.74). A temporary performance improvement in forward-backward force direction deviations from the perpendicular in the subgroup given feedback indicates that students are sensitive to feedback training.

Conclusion: An evaluation tool using 3D contact force component measurement enables the assessment of the overall magnitude of the manual contact force as well as its directional aspect. Compared with existing evaluations based on 1-dimensional force components, this 3D system allows for a more complete and, at the same time, more specific quantitative evaluation of the manual contact forces. Three-dimensional dynamic/kinetic augmented feedback has the additional potential of helping students and practitioners to improve their palpation and force delivery skills.

Responsiveness of the Short-Form 36 and Oswestry Disability Questionnaire in chronic nonspecific low back and lower limb pain treated with customized foot orthotics.

Robert Ferrari

Purpose: This study reports the responsiveness of the Short-Form 36 (SF-36) and Oswestry Disability Questionnaire (ODQ) to treatment with customized foot orthotics.

Methods: Thirty consecutive patients presenting to a primary care clinic with chronic (>3 months), nonspecific, low back pain and/or soft tissue lower limb disorders completed the SF-36 and ODQ before and 6 weeks after prescription of customized foot orthotics. Locations of any pain in the lower half of the body (including the low back), age, sex and duration of the most chronic pain were recorded. Responsiveness statistics of the ODQ and SF-36 physical and mental summary scores were calculated, as was correlation among these scores and the self-reported pain improvement scores.

Results: All subjects completed the baseline and 6-week questionnaires. The mean age of the

sample was 53.9 ± 12.9 years, with 57% men and 43% women. The mean duration of the most chronic pain symptom was 14 ± 14 months (range, 3-60 months). The mean ODQ score at baseline was 42.8% ± 14. 8% and at 6 weeks was 16.6% ± 5.0%. The physical component score of the SF-36 was 39.8 ± 5.0 at baseline and at 6 weeks was 47.3 ± 3.8. The mental component score of the SF-36 at baseline was 45.7 ± 6.1 and at 6 weeks was 47.9 ± 5.0. The responsiveness of the ODQ was calculated to be 9.40, the responsiveness being 1.77 for the physical component score of the SF-36 and 0.24 for the mental component score of the SF-36.

Conclusions: In this cohort, the ODQ and the physical component of the SF-36 appear to be responsive to treatment effects, with the ODQ having the highest responsiveness. The ODQ may be a useful outcome measure in trials of the effectiveness of customized foot orthotics in patients with nonspecific, chronic low back and/or soft tissue lower limb pain.

A case report of an uncommon cause of cauda equina symptoms.
Annabel Kier, DC, Martin D. Timchur, DC, Peter W. McCarthy, PhD

Objective: This case report discusses a patient who presented with right-sided buttock pain of apparently uncomplicated mechanical origin that was eventually diagnosed as a primary Ewing sarcoma/primitive neuroectodermal tumor of the sacrum.

Clinical Features: A 32-year-old male full-time student presented for care with right-sided buttock pain.

Intervention and Outcome: After examination, the patient was referred to his general practitioner for urgent magnetic resonance imaging, the report revealed no explanation for the presenting symptoms. After further imaging and biopsy, an eventual diagnosis of Ewing sarcoma/primitive neuroectodermal tumor was reached. The patient died 12 months later.

Conclusion: This case highlights a nondiscal cause for cauda equina symptoms. It emphasizes potential diagnostic complexities that may present due to preconceptions based upon the probability of symptoms being related to a specific disease process.

A case of vertebral metastasis with pathologic C2 fracture.
Matthew A. Davis, DC, John A.M. Taylor, DC

Objective: This report discusses a patient with a pathologic fracture of the C2 vertebra secondary to osteolytic metastasis from squamous cell carcinoma of the lung.

Clinical Features: The patient was a 68-year-old man with a chief complaint of neck pain who was referred by his physician to a chiropractic office. The initial onset of neck pain began after a forceful sneeze that resulted in a sensation of "a twig snapping" in the neck. Radiographs revealed osteolytic destruction and pathologic fracture of the C2 spinous process.

Intervention and Outcome: The patient was referred back to his primary care physician, who then referred him to an oncologist, who immediately initiated a course of radiation therapy and pain medication. Palliative care by the chiropractor consisted of soft tissue massage of the cervical spine musculature to treat associated muscle spasms and pain. The patient responded well to gentle myofascial therapy. However, the osteolytic destruction of the C2 posterior elements progressed, resulting in an unstable subluxation of C2 and associated cord compression. The spine was stabilized with a rigid collar, but the metastatic destruction progressed, eventually resulting in

quadriplegia and subsequent death from respiratory distress.

Conclusion: Patients with a history of cancer complaining of new onset of back or neck pain should be assumed to have vertebral metastasis until proven otherwise. Trivial trauma should be taken seriously in these cases and investigated with appropriate clinical, laboratory, and imaging examinations. Vertebral malignancies may be a contraindication to spinal manipulation; however, the chiropractic physician plays a significant role in early detection and diagnosis.

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