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Editorial Staff

Danish chiropractic patients then and now - a comparison between 1962 and 1999.

Jan Hartvigsen, DC, PhD; Ole Bolding-Jensen, DC; Henning Hviid, DC; Niels Grunnet-Nilsson, DC, MD, PhD

Background: Little is known about changes in the chiropractic patient population over time.

Objective: To compare two surveys describing the Danish chiropractic patient population.

Design: Data concerning location of primary complaint and duration of this complaint for patients in Danish chiropractic offices were compared between 1962 and 1999.

Setting: Private chiropractic practice and nonprofit research institution.

Outcome measures: Location of primary diagnosis/complaint, duration of complaint.

Results: In 1962, data for 1,118 patients were collected, with a participation rate of 93%. In 1999, data for 1,897 patients were collected; 88% of all Danish chiropractic clinics participated in the study, and 94% of all eligible patients filled out a questionnaire. In both 1962 and 1999, the most frequent complaints were pain in the lower back or neck, either alone or with radiation to the extremities (roughly 70% of patients). In 1962, almost four times as many patients complained of headache compared to 1999 (11% vs. 4%). Although there were significant differences, less than 10% of patients presented with a nonmusculoskeletal disorder in both 1962 and 1999 (7% and 3%, respectively). In 1962, almost half of the patients had had their complaint for more than one year; in 1999, approximately 80% had had their complaint for less than one year.

Conclusions: In 1962 and 1999, Danish chiropractors primarily treated patients with pain syndromes relating to the low back and neck. Patients presenting with type-O disorders comprised less than 10% of the total patient population in both surveys.

Key Indexing Terms: Chiropractic; Denmark; patients; low back pain; neck pain; organic disorders; complaint; survey.

Do chiropractic colleges' off-campus clinical sites offer diverse opportunities for learning? A preliminary study.

Elaine Morschhauser, DC; Cynthia Long, PhD; Cheryl Hawk, DC, PhD; Karen Boulanger, BA; Jeanne Black, DC; Thomas Carpenter, DC; Grant Iannelli, DC; Owen Lynch, DC; John Stites, DC

Objective: This study involved the collection of data on the demographic characteristics and chief complaints of patients of chiropractic college teaching clinics, to study whether patients who

visited different types of teaching clinics were demographically or clinically dissimilar. It represents a first step toward our ability to collect data from teaching clinics to test for differences between specific clinic populations.

Design: Descriptive cross-sectional study, implemented through a survey of patients. A survey form and a data collection infrastructure already in place for an established, practice-based research program allowed the application of existing resources in the teaching clinic environment.

Participants: Participating clinics included on-campus, off-campus, and outreach teaching clinics of four chiropractic colleges. Recruitment took place via word-of-mouth; clinic directors volunteered to participate in the one-week survey. The study population consisted of every patient, new and established, of any age, presenting at participating clinics during the week of March 16-21, 1998.

Results: Fourteen participating clinics returned surveys on 1,612 patients. Patients' age; sex; race; and nature, onset and duration of chief complaint were significantly different among the categories of teaching clinics. Salient dissimilarities occurred in racial distribution, types of chief complaint and duration of chief complaint, among the different clinics' patient populations.

Conclusion: Different types of teaching clinics may facilitate greater diversity in the patient population seen by chiropractic students, broadening the clinical training of chiropractic students by providing diversity in clinical settings and patient populations.

Key Indexing Terms: Chiropractic; teaching clinics; students; clinical education; cultural characteristics; practice-based research; utilization of services.

The responsiveness of the Bournemouth and Oswestry Questionnaires: prospective pilot study.
M. Perillo, DC, MPH; R. Bulbulian, PhD

Background: The assessment of health-related quality of life (HRQL) outcomes information has become an essential feature in the delivery of quality health care. Outcome assessment and building clinical research capacity have been identified as recommended areas of priority for chiropractic research, chiropractic colleges and the profession.

Objective: This paper reports the results of a multisite pilot project utilizing the New York Chiropractic College's three off-campus health centers. The project sought to examine generic issues related to research infrastructure and feasibility; perform pilot testing of the responsiveness of the revised Oswestry Disability Index (ODI) and the Bournemouth Questionnaire (BQ); and develop estimates of change and population size for the possible future projects.

Methods: The infrastructure created to perform the project, including an on-site clinician research manager; on-site student research assistants; identification; recruitment and patient flow; demographic and clinical characteristics; and abstraction instruments, is described. Responsiveness study subjects completed three HRQL assessments at baseline, 15 and 30 days; at 45 days or discharge, they completed the same questionnaires and a global rating of change. Responsiveness is reported by analysis of standardized estimates of change, relative efficiency, and receiver-operator characteristic (ROC) plots.

Results: We successfully identified 82% of possible study patients; the real eligibility rate in our population was 30%. Seventy patients were accrued in four months, and 26 patients followed through to provide global ratings of change scores. Responsiveness by standardized change scores

was: NRS= 1.19; ROD= 0.91; BQ = 0.78, and by relative efficiency it was BQ/ODI = 0.86; ODI/NRS = 0.76; and BQ/NRS = 0.66. The area under the curves ranged from 0.69 for the BQ to 0.86 for the NRS.

Conclusion: Recommendations for modification and use of the infrastructure, research capacity, and future outcome and appropriateness assessment projects are offered.

Key Indexing Terms: Outcomes research; pilot study; chiropractic repeatability over time of posture; X-ray positioning; and X-ray line drawing:

An analysis of six control groups.

Deed Harrison, DC; Donald Harrison, PhD, DC; Christopher Colloca, DC; Joseph Betz, DC; Tadeusz Janik, PhD; Burt Holland, PhD

Background: There exists debate concerning the repeatability of posture over time, and X-ray positioning repeatability and X-ray line-drawing reliability. These ideas seem to negate the use of before-and-after spinal X-ray imaging to detect and correct vertebral subluxations.

Objective: To review the results of control groups in six clinical control trials with pre- and post-X-ray measurements taken days, weeks, months, or years apart, the purpose being to accept or reject the hypothesis that X-ray analysis procedures are not repeatable, reliable or reproducible.

Data Sources: Six published control groups from original data. Other data were obtained from searches on MEDLINE, CHIROLARS, MANTIS, and CINAHL on X-ray reliability, posture and positioning.

Results: Comparison of initial and follow-up X-ray data for six control groups indicate that measured angles and distances between initial and follow-up X-ray measurements on lateral and AP radiographs are not significantly different when utilizing CBP®

Conclusion: Posture, X-ray positioning and X-ray line-drawing are all very reliable/repeatable. When CBP®

Key indexing terms: Reliability; repeatability; posture; spine; X-ray; chiropractic technique.

Aberrant protective force generation during neural provocation testing and the effect of treatment in patients with neurogenic cervicobrachial pain.

Michel Coppieters, PhD, PT; Karel Stappaerts, PhD, PT; Leo Wouters, PT; Koen Janssens, PT

Background: Observing the occurrence of protective muscle activity is advocated when assessing the peripheral nervous system by means of neural provocation tests. However, no studies have demonstrated abnormal force generation yet in a patient population.

Objectives: To analyze whether aberrations in shoulder girdle elevation force during neural tissue provocation testing for the median nerve (NTPT1) can be demonstrated, and whether possible aberrations can be normalized following cervical mobilization.

Study design: A single-blind randomized comparative controlled pilot study.

Setting: Laboratory setting annex in a manual therapy teaching practice.

Participants: 20 patients with unilateral or bilateral neurogenic cervicobrachial pain.

Methods: During the NTPT1, a load cell and electrogoniometer were used to continuously record the shoulder girdle elevation force in relation to the available range of elbow extension. Following randomization, the immediate treatment effects of a cervical contralateral lateral glide mobilization technique (experimental group) and therapeutic ultrasound (control group) were analyzed.

Results: On the involved side, the shoulder girdle elevation force occurred earlier, and the amount of force at the end of the test was substantially, though not significantly, larger than on the uninvolved side at the corresponding range of motion. Together with a significant reduction in pain perception following cervical mobilization, a clear tendency toward normalization of the force curve could be observed - namely a significant decrease in force generation and a delayed onset. The control group demonstrated no differences.

Conclusions: Aberrations in force generation during neural provocation testing are present in patients with neurogenic pain and can be normalized with appropriate treatment modalities.

Key indexing terms: Chiropractic manipulation; median neuropathy; neurodynamic test peripheral neurogenic pain; cervical manipulation.

The stubborn hip: idiopathic avascular necrosis of the hip.

Jason Pajaczkowski, DC

Objective: To highlight the unusually indolent course of avascular necrosis in this patient; the risk factors of which chiropractors should be aware; the necessity of and means to an early diagnosis; the limitations of plain film radiographs; and current medical treatments.

Clinical features: A 27-year-old male professional soccer player suffered from a tight and achy right hip of approximately six years' duration, which increased with physical activity. His active range of motion was limited by 25% in extension and abduction, and all resisted ranges of motion produced pain. After an equivocal X-ray and bone scan, an MRI was ordered and revealed a subchondral defect located on the superior aspect of the right femoral head, consistent with avascular necrosis of the femoral head.

Intervention and outcome: Presurgical management included Cybex testing; massage; myofascial release; interferential current; muscle strengthening; and muscle-balancing exercises three to five times per week for five months. The patient underwent a curette procedure, six weeks after which he returned to the chiropractic office for postsurgical rehabilitation, in which he is still involved today. He has made progress with respect to flexibility, strength and muscle coordination.

Conclusion: Idiopathic avascular necrosis of the hip is a clinical entity characterized by pain in the hip made worse with activity and at night, which may radiate to the groin, back or thigh. Often, physical exam and X-ray findings are equivocal, at which point advanced imaging, such as an MRI, should be ordered to identify the disease in its earliest stages.

Key indexing terms: Femur head; avascular necrosis; soccer.

Chiropractic management of chronic chest pain utilizing mechanical force, manually assisted short-lever adjusting procedures

Bradley Polkinghorn, DC, Christopher Colloca, DC

Objective: To discuss a case involving a patient suffering from chronic chest pain, dyspnea and anxiety. Resistant to previous treatment regimens, the condition responded favorably to chiropractic manipulation of the costosternal articulations.

Clinical features: A 49-year-old male suffered from chronic chest pain, dyspnea and anxiety for over four months. The severity of the patient's condition gradually progressed to the point of precluding active employment and most physical activity. Prior efforts to treat the condition had met with failure.

Intervention and outcome: The patient received mechanical force, manually assisted (MFMA) short-lever chiropractic adjustment of the thoracic spine; in particular, the costosternal articulations. Adjustments were delivered via an Activator adjusting instrument. The patient responded favorably to the intervention, obtaining prompt relief of his symptomatology. Sustaining chiropractic care rendered over a 14-week period of time resulted in complete resolution of the patient's previously chronic condition, with recovery maintained at nine months' follow-up.

Conclusion: Certain types of chest pain may have their etiology in a subluxation complex involving the costosternal articulation. The possibility of myocardial involvement must be considered with all patients whose presenting symptomatology includes chest pain. However, a musculoskeletal involvement, including costosternal subluxation complex, may be the underlying cause of the symptomatology in certain patients. When that is the case, chiropractic adjustment may provide for an effective mode of treatment. Further study in an academic research venue is merited to investigate the role conservative chiropractic care can provide for sufferers of chest pain.

Key indexing terms: Chest pain; pseudoangina; costochondritis; ribs; chiropractic.

Neurofibromatosis type I: Von Recklinghausen's disease; clinical and imaging features.

Brooke Gajeski, DC; Norman Kettner, DC; Eric Awwad, MD; Ron Boesch, DC

Objective: To discuss the case of a 45-year-old female with a prior diagnosis of neurofibromatosis type 1 (NF-1), complaining of low back and cervical spine pain with bilateral upper extremity paresthesias.

Clinical features: The patient had a dull, achy, constant low-back pain of four months' duration, with mild headaches and upper-extremity paresthesias. Multiple skin lesions and spinopelvic postural imbalances were present. Diagnostic radiography, along with advanced imaging, demonstrated multilevel dysplastic osseous changes with dural ectasia; scoliosis; and tumor extension. In addition to the previous diagnosis of neurofibromatosis, our clinical diagnosis included segmental dysfunction with resultant cervicalgia, lumbalgia and myospasm.

Intervention and outcome: Treatment consisted of a course of spinal manipulation of the lumbopelvic region, with adjunctive therapy consisting of interferential therapy, heat, and rehabilitative exercise. Marked reduction in pain and paresthesia with improved function were

achieved.

Conclusion: NF-1 is a multisystem disease with neoplasia of the skin and nervous system. Patients experience a lifetime of morbidity, and an increased risk of mortality, dependant upon the extent of the disease. A multitude of therapeutic regimens may be engaged to improve NF-1-associated symptomatology and morbidity. Chiropractic spinal manipulation may have a positive effect on pain reduction and improved function in NF-1 patients without spinal instability.

Key indexing terms: Neurofibromatosis; plexiform neurofibroma; low back pain; neuroectodermal tumors; chiropractic.

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