THE CHIROPRACTIC REPORT

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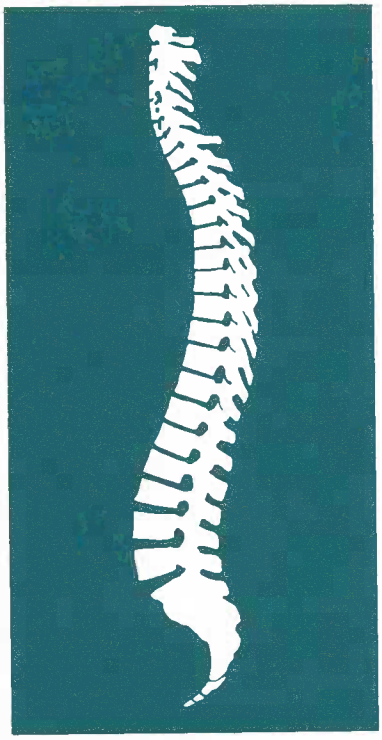

PROFESSIONAL NOTES

Walsh D'Epiro N (1998) *A Low-Tech Approach to Low-Back Pain*, Patient Care, April 30, 1998:84-105.

The cover story of this recent issue of the US medical journal *Patient Care* provides advice for family physicians on the management of low-back pain, authoritative advice because it is endorsed by leading specialists including Professor David Borenstein, Division of Rheumatology, George Washington University Medical Center, Washington DC, (principal author of the text *Low- Back Pain: Medical Diagnosis and Comprehensive Management,* W.B. Saunders) and Professor Richard Deyo, Professor of Medicine, University of Washington, Seattle.

Recommendations for management, consistent with the US government's AHCPR guidelines, are patient reassurance, activity, non-prescription medications, manipulation and acupuncture. Specifically, the advice on manipulation is:

"Various types of manipulation help some patients, and consultation with a chiropractor, for example, may be appropriate."

Most patients, doctors are advised, have "uncomplicated mechanical back pain". This provides the logical basis for manipulation. The patient care flowchart or algorithm advises physicians to "consider referral for manipulation or acupuncture depending on patient preference" as part of the initial therapeutic plan and recommends a 4-6

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LOW-FORCE AND SOFT-TISSUE TECHNIQUES

"Philosophy, special or general is not the foundation upon which I built the Science of Chiropractic. Its science is based on *tone. Tone* is the standard from which we note the variations of structure, temperature, tonicity, elasticity, renitency, and tension. It is the standard of health; any deviation therefrom is disease. *Tone* is the *Basic Principle*."[1]

D.D. Palmer

"After more than 50 years in this field, it is now clear to me that functional restoration of the motor system ultimately comes down to *tone*; that is *tone* of the tissues."[2]

Karel Lewit MD DSc.

A. INTRODUCTION

1. Much is written about the classic chiropractic adjustment, the precise and fast manipulative techniques that gap the targeted joint and, with spinal joints, produce potent reflex effects in the central, peripheral and autonomic branches of the nervous system. This is the most researched form of chiropractic treatment.

However, as the excellent new JMPT article[3] on Raymond Nimmo DC and his development of trigger-point therapy in the 1950s reminds us, chiropractic education and practice encompass a wide range of low-force and soft-tissue techniques. These techniques become increasingly important as:

- More is learnt in the evolving world of the diagnosis and management of the locomotor or neuromusculoskeletal system.
- An era of mutual respect and inter-referral of patients between doctors of medicine and chiropractic has arrived. This means that many patients who would not have previously consulted a chiropractor, such as post-operative elderly patients, are now under chiropractic care. Here is an example, from Los Angeles chiropractor Dr. Craig Morris.[4]

a) *Summary History.* A neurologist referred a 67 year old retired woman patient for chiropractic assessment for recurrent vertigo and chronic right neck, shoulder, arm and hand pain. Unsuccessful prior care included right carpal tunnel release, right shoulder arthroscopic acromioplasty, single level C5/C6 anterior fusion, posterior fusion of C4/C5 and C6/C7, another C5/C6 fusion with a fusion appliance, and multiple steroid injections of the right wrist, right shoulder, right cervical facets, right cervical epidural region, and stellate ganglion. In addition the patient had received much oral medication (NSAIDs, muscle relaxants, pain medication, antidepressives, and anti-vertigo medication) and had undergone several unsuccessful courses of physical therapy.

b) *Assessment and Diagnosis.* The patient was moderately obese and displayed a head-forward posture with rounded shoulders. Cervical mobility was decreased by 50%. Right shoulder mobility was decreased in abduction, flexion, and external rotation by 30%. Neurological testing of the brachial plexus confirmed that reflex, sensory, and motor function was intact. Prior electrodiagnostics of the cervical spine and brachial plexuses (EMG and SSEP) were bilaterally normal.

Palpatory examination revealed joint dysfunctions/subluxations in the upper cervical spine, and at the cervicothoracic and bilateral costal-transverse junctions. Multiple myofascial trigger points were present in the cervicothoracic region, right shoulder girdle, and right upper extremities. An 'active' surgical scar was present, adhering to the C4-T1 spinous process. Radiographs of the cervical spine revealed moderate osteoporosis, in addition to the anterior fusion appliance at C5/C6 and a three level fusion from C4-C7. During examination the patient demonstrated pain avoidance behavior.

Diagnosis was multi-regional joint dys-

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week course of manipulation. These are all rather different recommendations than those given five years ago, and illustrate how much the medical management of back pain has changed.

NORTH AMERICA

1. **US Military - Chiropractic Services**. In 1995 chiropractic services were integrated into the military health care system at 10 bases throughout the US on a US Congress mandate to determine the feasibility and advisability of providing chiropractic care for all military personnel and their families. This demonstration project has been most successful in terms of integration, acceptance and use of chiropractic services, which will now likely become permanent.

Data collection on outcomes has not been as successful. Three comparison sites were established and these have generated sound data for chiropractic care but insufficient data for traditional care. As a result the initial demonstration project has been extended one year to September 1999, and three additional new sites will participate in a randomized controlled trial comparing outcomes of chiropractic and medical care for selected musculoskeletal conditions. Outcomes will include cost analysis. The three new sites are the National Naval Medical Center (Bethesda) and the Walter Reed Army Medical Center, Washington DC, and Wilford Hall Medical Center, San Antonio, Texas.

2. **US - Why Do Patients Choose Chiropractic Care?** The 1993 national survey by Eisenberg et al published in the *New England Journal of Medicine* was a watershed paper - it triggered huge medical and health system interest in what was then called 'unconventional medicine' because it reported that in 1990 Americans made more visits to alternative health care providers (425 million) than to allopathic primary care physicians (388 million). Chiropractic services were labelled alternative; and found to be the most popular form of alternative care.

A new national study by John Astin PhD from the Stanford University School of Medicine, California will also be widely read and quoted, and is the first to ask the next logical question - *why* do patients use alternative medicine? It is noted:

a) A detailed written questionnaire was sent to a random sample of 1500 people across the US. It was returned by 1,035 - a response rate of 69%.

b) The basic question being investigated was "what are the social, cultural and personal factors underlying a person's decision to use alternative therapies." Questions asked tested three theories:

i) *Dissatisfaction.* That patients were dissatisfied with conventional medical treatment.

ii) *Need for personal control.* That patients sought alternative therapies because they were seen as less authoritarian and offering more personal autonomy and control in health care decisions.

iii) *Philosophical congruence.* Better compatibility with the patient's values, world view, spiritual/religious philosophy and beliefs regarding the nature and meaning of health and illness.

Questions also looked at demographic factors and health status.

c) Results of particular significance to chiropractors are:

i) 40% of respondents had used some form of alternative health care during the past year. The top four treatment categories were chiropractic (15.7%) lifestyle/diet (8%), exercise/movement (7.2%) and relaxation (6.9%). In other words chiropractic was used twice as much as the next most frequent form of alternative medicine.

ii) The most frequently cited health problems treated with alternative therapies were chronic pain (37%), anxiety/chronic fatigue syndrome (31%), strains/muscle sprains (26%) and headaches (24%). Chiropractors were commonly used for all of these and also arthritis/rheumatism.

iii) "Chiropractic care represented close to 50% of all alternative treatments used for headaches".

iv) Those who used alternative medicine fell into two very distinct camps:

1. *Patients with primary reliance on alternative medicine.* These patients have a strong distrust of and dissatisfaction with physicians in the conventional medical system. Significantly, however, these patients are few in number - only 4.4% of the sample population or 45 persons.

2. *Combined use of conventional and alternative medicine.* This represents most people who use chiropractic and other alternative medicines, and importantly this survey shows that these people are *not* dissatisfied with conventional medicine. Thus:

• 39% of those who said they were highly satisfied with conventional practitioners (who represented 54% or just over half of the whole survey population) used alternative therapies.

• 40% of those who said they had a high level of dissatisfaction with conventional practitioners (9% of the total sample) used alternative medicine.

These are very similar percentages. These findings, in a major, well-controlled survey suggest that chiropractors will usually be in conflict with their patients if they are strongly critical of the medical profession.

d) Other predictors of use of alternative medicine as shown by this survey were more education; a holistic orientation to health; having had a transformational experience that changed the person's world view; anxiety, back problems or chronic pain; classification in a cultural group identified by commitment to environmentalism, commitment to feminism, and interest in spirituality and personal growth psychology.

What this means is that this survey confirmed the various theories advanced for use of alternative medicine - except for the theory of dissatisfaction with conventional medicine, which was only confirmed for the minor sub-group that made primary use of alternative medicine. (Astin JA (1998) *Why Patients Use Alternative Medicine: Results of a National Study*, JAMA 279(19):1548-1553).

EUROPE

1. **Sweden - Government to Recognize SCC Graduates**. The practice of chiropractic has been regulated by law in Sweden since 1989. At that time there were several hundred people practising as chiropractors but only approximately 100 of them were graduates of accredited chiropractic colleges. An independent commission appointed by the government had recommended that only formally trained DCs should be recognized but, in a political compromise not seen elsewhere in the world, the Swedish government did not offer title protection. It created two categories of chiropractor. Formal graduates were now entitled to use the title *registered chiropractor* and their patients would receive reimbursement for their services under the publicly funded health care system, but others practising as chiropractors could continue to use that title.

Since that time a Scandinavian College of Chiropractic, which has not sought accreditation through the European Council on Chiropractic Education and has been opposed by the Swedish Chiropractic Association which represents registered chiropractors, has grown and is now graduating 75 practitioners per year. In May the government introduced legislation (Proposition 1997/98:109) that will formally recognize the Scandinavian College of Chiropractic and give full authorization to its graduates as registered chiropractors.

Government funding for chiropractic services is not on a national basis but through 24 regional or county councils. Some counties do not have chiropractors, and a few with chiropractors still have no reimbursement arrangements, but most do and approximately 70% of the Swedish population has access to government funding for chiropractic care. Swedish legislative restrictions on the usual international scope of practice of chiropractic relate to imaging (chiropractors can refer for x-ray, CTs and MRIs but may not perform these studies themselves) and treatment of patients under the age of 16

years (chiropractors are authorized to treat children but, pursuant to a 1991 law, may only use joint mobilization - not joint manipulation).

2. **UK Research - High Remission Rate for Back Pain a Myth**. New research just published in the British Medical Journal points to the "frequently repeated assumption that 90% of episodes of low-back pain seen in primary care will have resolved within a month", notes that this is based on a 1973 study of one medical practice where recovery was judged on whether or not the patient made further visits to the general practitioner, and finds that study and its conclusions deeply flawed. The new study concludes:

a) "While 90% of subjects consulting a general practice with low-back pain ceased to consult about the symptoms within 3 months, most still had substantial low-back pain and related disability". This was true on follow-up at both 3 months and 12 months.

b) "We should stop characterising low-back pain in terms of a multiplicity of acute problems, most of which get better, and a small number of chronic long term problems. Low-back pain should be viewed as a chronic problem with an untidy pattern of grumbling symptoms and periods of relative freedom from pain and disability interspersed with acute episodes, exacerbations, and recurrences."

In this study, which tears away the foundation for practice based on natural remission and 'wait-and-see':

i) All adults consulting with a general practitioner for low-back pain over 12 months in two general practices in Manchester in the UK were followed.

ii) 490 patients presented with low-back pain - 6.4% of all patients seen. 463 of them had a new episode of low-back pain.

iii) Patients were visited by a research nurse within a week of their first consultation, then again after 3 and 12 months. Severity of pain was measured on a visual analogue scale and patients completed a disability index (the Hanover Back Pain Daily Activity Schedule).

iv) 275 of the 463 patients (59%) did not have a further GP consultation after the first visit, 150 (32%) had a repeat consultation within 3 months, and only 38 (8%) a repeat consultation after 3 months.

However only 21% completely recovered within 3 months, and only 25% by 12 months. Of those with both pain and disability initially, only 18% (less than 1 in 5) had fully recovered by 12 months.

The researchers, Croft et al from the School of Postgraduate Medicine, Industrial and Community Health Research Centre, University of Keele and the School of Epidemiology and Health Sciences, University of Manchester, decided to investigate the claim that 90% of low-back episodes resolve within a month because it was logically inconsistent with many of the other statistics. In the UK for example:

• 38% of adults report a significant episode of low-back pain each year.

• A previous episode of low-back pain is the strongest risk factor for a new episode.

• The prevalence of disabling low-back pain for which benefits are paid has risen exponentially.

(Croft PR, Macfarlane GJ et al (1998) *Outcome of Low-Back Pain in General Practice: A Prospective Study*, Br Med J 316:1356-1359).

ASIA/PACIFIC

1. **New Zealand - The Consumer's View of Chiropractic**. In September 1997 the NZ Consumer Institute reported a large national survey on the use of alternative therapies. It was found that half (51%) of respondents had tried some form of alternative therapy, that chiropractic, herbal medicine and homeopathy were the most widely used, and that the only one of these with a high satisfaction rating (74%) was chiropractic which was now "the most regulated and the most respectable" of all alternative therapies. A future article on chiropractic, osteopathy and physiotherapy was promised - that has now been published in the February 1998 issue of the Institute magazine *Consumer*.

It is always interesting to see what consumers have to say about your product. *Consumer* is positive about the benefits of chiropractic (The Spinal Adjusters), osteopathy (The Soft Touch) and physiotherapy (Exercise is the Key) but ultimately gives this advice on choosing a practitioner:

"All of the disciplines have demonstrated benefits. It's quite possible the most important choice will not be to decide which one is best, but to find the right practitioner." This is what the Consumer Institute has to say about manipulation:

"*Manipulation* is a general word for many different forms of hands-on therapeutic techniques used by a number of health professions to treat muscles and joints. The aim of manipulation is to relieve pain and restore movement. It may be quick and vigorous, and accompanied by a "click" from the joint. Or it may be gentle, with pressure carefully directed onto the problem area. The technique varies according to the patient and their ailment.

Manipulation is an integral part of the training and therapeutic approach of chiropractors and qualified osteopaths. Physiotherapists can receive specialised training at postgraduate level. Accidents among skilled practitioners are very rate (one in a million, says chiropractors), but there is a risk of serious complications such as stroke. The technique most likely to cause damage involves very rapid rotational movements of the head and neck, and the therapists you are most at risk from, in whatever discipline, are those with inadequate training.

Manipulation is recommended for the treatment of acute low back pain, according to Accident Compensation Commission guidelines. Forceful manipulation is not generally recommended for any part of the body if you have fractures, severe osteoporosis, bleeding disorders, or infection or marked inflammatory conditions of the musculoskeletal system."

At its appearance before the New Zealand Commission of Inquiry into Chiropractic 20 years ago in 1978 the Consumer Institute, without the benefit of any public surveys, gave evidence to oppose the recognition of chiropractic. What dramatic changes we are witnessing - in chiropractic, in medicine, in health care systems, in the role of patients/consumers and in their Institute.

Cervicogenic Headache - Further New Anatomy

The last issue of this Report announced the discovery by US dental researchers of new connective tissue bridges between the muscles and dura in the upper cervical spine, considered to be an important new anatomical basis for cervicogenic headache.

It is exciting to report that additional and equally significant discoveries have just been reported in JMPT by chiropractic researchers at the Anglo-European College of Chiropractic in England. A team led by Barry Mitchel PhD, Senior Lecturer in Anatomy, AECC and Kim Humphreys DC PhD, Head of Academic Affairs, AECC has demonstrated:

• The ligamentum nuchae, one of the posterior ligaments that stabilizes the upper cervical spine, has more complex attachments than previously described.

• Firstly, the ligament has bilateral attachments to the occipital bone at the base of the skull.

• Secondly, it has a direct attachment to the posterior dura. A midline portion of the ligament branches forward between the first and second cervical vertebra to attach directly to the cervical posterior spinal dura.

This has obvious implications for the biomechanics of the cervical spine, the relationship between altered biomechanics and adverse tension of the spinal dura and cervicogenic headache, and the role of manipulation as a treatment.

(Mitchell BS, Humphreys BK, Sullivan E (1998) *Attachments of the Ligamentum Nuchae to Cervical Posterior Spinal Dura and the Lateral Part of the Occipital Bone*, J Manipulative Physiol Ther, 21(3):145-148.)

force techniques. They are all based on the concept of slowing down palpation to identify dysfunctional barriers in various tissues, then applying low force until the abnormal tissue tension or barrier is released.

a) *Skin stretch*. There is palpation for skin drag or resistance, which is caused by hyperactivity of sweat glands and identifies hyperalgesic skin zones (HAZ). Where there is a resistance barrier it releases "after a latency period of a few seconds."

b) *Connective Tissue Stretch*. A fold is created and stretched as in Figure 1. Abnormal resistance is felt if there is a restrictive lesion - such as a hypersensitive scar or tissue shortness or tension associated with overactive muscle. Stretching of the connective tissue is an effective way to lengthen the muscle "because the stretch reflex (in the muscle) can be avoided".

c) *Fascia Shift and Stretch*. Because fibers of fascia are typically intertwined with muscle fibers "free mobility of fascia is essential for normal muscle and joint function .... this principle is particularly important in the fasciae that are common to a great number of muscles, like the lumbodorsal." Mobility of fascia is often restricted in chronic pain patients and, if not restored, "muscle and joint dysfunction will recur."

d) *Shifting Periosteal Tissue*. Gentle pressure, unlike the more forceful periosteal massage or deep friction, moves the tissue away from the point of pain.

e) *Post-Isometric Relaxation for Muscle Spasm and Trigger Points*. As with all the above techniques the abnormal barrier of resistance is engaged, but the patient then exerts slight resistance in the opposite direction for 10 seconds then relaxes. The chiropractor continues to hold at the barrier which then releases as the muscle lengthens.

f) *Joint Mobilization*. Joint mobilization, or 'soft manipulation', also uses low-force to hold the tissue barrier until it releases. Mobilization can be frustrating and ineffective in the face of protective muscle spasm or splinting. The key point here is that use of the neuromusculoskeletal techniques already described, which releases muscle spasm, means that much more can then be achieved with low-force mobilization of the joint.

9. All of these above techniques aim to normalize barriers to movement in soft tissues and joints. Joint adjustment or manipulation, which adds the controlled high-velocity thrust, penetrates the barrier. This has various benefits including greater and more prolonged separation of the joint surfaces (valuable for example, where there is nerve or connective tissue entrapment), more pronounced reflex effects in the nervous system, and more immediate relief for the patient. In addition, thrust techniques are less time-consuming. That is why the adjustment has, and will likely retain, a predominant role in chiropractic practice. However it is not suitable for all patients.

10. Lewit, a neurologist whose interest in manual medicine originated from study with a Prague chiropractor and who, like chiropractors, has always viewed manual medicine as closer to neurology than orthopedics, provides these summaries of two recent cases where soft-tissue dysfunction amenable to low-force techniques dominated the clinical picture.[14]

a) *Mr. A.P. - Headache and Thoracic Pain.* Mr. A.P., an interpreter aged 49, was seen in August 1997. He had suffered from headache, since adolescence, mainly on the right side. For the last five years he had experienced pain almost every day. He had also experienced pain in the thoracic region for 20 years. His appendix was removed in childhood, and he had suffered a serious accident at age 8 when he fell on a spike and injured his thorax.

On examination he had restricted sacroiliac joint movement, a tender spinous process in the upper cervical spine (C2), and restricted mobility of the left fibula with a trigger point in the biceps femoris. Extended scar formation was found at the thorax on the left side which adhered to and depressed the ribs restricting respiration on the left.

Initial treatment was aimed at moving the scar adhesions against the underlying bone using soft-tissue techniques. There was an immediate integrated effect on locomotor function - mobility of the fibula normalized, the sacroiliac joints were relieved, and the tenderness at C2 disappeared. The patient was instructed to stroke the scar regularly.

On his next visit the patient's headache was much improved, occurring only once a week. He also complained at this point about restricted breathing and blurred vision. The scar, which was treated in a similar fashion over several visits, proved to be the key component. He now only had occasional headache, but obtained complete relief whenever the scar was treated.

b) *Mrs. Z.M. - Abdominal and Rib Pain.* Mrs. Z.M., a woman aged 57, was seen in October 1997 with a main complaint of pain in her right lower abdomen. The pain, which was aggravated by trunk flexion or sitting, dated from 1990. An appendectomy was performed in 1991. The abdominal pain remained, but changed its character and could now be provoked by pressure.

Following a hernia operation in 1996 the abdominal pain remained but at times became sharp. She now experienced pain on forward and back bending. To relieve pain when lying down she had to draw up her legs. The pain had now spread to her lower ribs on both sides. She had delivered two children, one by cesarean section.

On examination there were trigger points on her right side beginning with the sternocleidmastoid, the pectoralis, the oblique abdominals, the adductors, hamstrings gluteals, erector spinae and rhomboidei, with movement restriction at the fibular head and upon trunk retroflexion. There was dysesthesia at her right planta. In short, there was a right-sided nociceptive chain down to the sole of her foot. First treatment was directed to the foot dysesthesia and was light stretching or stroking. The entire nociceptive chain resolved, and even the skin drag around her scar improved. Connective tissue at the scar was folded and stretched and this removed all resistance in her abdomen underneath the scar and made trunk retroflexion painless. The patient was advised to stroke the sole of her right foot and the scar region in her abdomen every day.

When next seen 12 days later she was considerably improved, with no pain at rest. There was still pain on fast movement. On examination there was spasm of the psoas, erector spinae and quadratus lumborum muscles on the right, with painful trunk rotation. Postisometric relaxation of the

Table 1

Two Case Histories - Use of Low-Force Techniques

In these two cases from California chiropractor Dr. Craig Morris good clinical results are achieved with patients not suited to high-velocity adjustment or joint manipulation. Dr. Morris is a graduate of Cleveland College of Chiropractic at Los Angeles who is presently completing a postgraduate chiropractic diplomate in rehabilitation. He is a postgraduate instructor at Cleveland and at the Los Angeles College of Chiropractic. He maintains a traditional chiropractic practice but now incorporates soft-tissue techniques acquired from study in Europe with Dr. Lewit and Dr. Janda.

Case 1 - A Geriatric Patient with Neck and Shoulder Pain and a Recent Cerebrovascular Accident (CVA).

Assessment and Diagnosis. A 73 year old retired woman presented with right cervicodorsal and shoulder pain of four days duration. Symptoms were brought on by exercises from a prescribed occupational therapy program which was part of her recovery from a left sided CVA which occurred four months previously. The patient still experienced minor residual right-sided hemiparesis. She rated her pain level on a pain scale at 7 out of 10.

Clinical findings included mild hyporeflexia of the right upper and lower extremities, difficulty in performing fine movement patterns of the right upper extremity, such as buttoning clothing and writing, and mildly spastic gait on the right. Palpable joint dysfunction was present at various levels of the cervical and upper thoracic spine and at the right acromioclavicular joint. Hypertonicity was prominent in the right cervical musculature, with multiple myofascial trigger points in the scapular elevators and protractors. Cervical range of motion was diminished by 40%, right shoulder mobility by 20 degrees in abduction and flexion.

Diagnoses were multi-level joint dysfunction/subluxation at the spine and right shoulder and myofascial pain syndrome of the right cervicodorsal region and shoulder girdle.

Intervention and Results. Post-isometric relaxation techniques (PIR) were performed to the musculature in the right cervical and periscapular regions, joint mobilization techniques to the restricted joints. Additionally the patient's PNF diagonal patterns provided by her occupational

therapy program were reviewed and modified. Following six treatments over a period of three weeks the patient's cervicodorsal and right shoulder symptoms were completely resolved and she was returned to her occupational therapy program. There was no recurrence of pain at two months follow-up.

Case 2 - Geriatric Osteoporotic Woman with a History of Dizziness, Falls and Fractures.

Assessment and Diagnosis. A 74 year old retired woman presented with persistent loss of balance of more than one year in duration. Prior medical care, including neurological assessment and medication failed to provide any improvement in her condition. She had gradually become more restricted in daily activities and could no longer drive on account of dizziness. She required the assistance of a wall or other stable object to maintain a static stance.

The patient had a history of three fractures during the past three years. The first, a left femur fracture, occurred after she suddenly fainted and resulted in rod replacement surgery. The second was a right femur fracture after a fall, the third a right wrist fracture after another fall. The patient reported that she had been diagnosed with osteoporosis and warned by her physician against spinal manipulation because of risk of fracture. Medical advice was that nothing could be done for her. Because of increasing lifestyle restrictions and fear of falling she sought chiropractic care.

Clinical findings included an inability to stand in place for 10 seconds without touching a stable object but an absence of vertigo when in a seated position. Seated neurological assessments, which included cranial nerve testing, tests of vestibular dysfunction (Hautant's and finger-to-finger/finger-to-nose tests), all gave results within normal limits. Cervical radiographs revealed moderate levels of degenerative change in the cervical spine and marked decrease in osseous cortical density. Palpation revealed multiple levels of joint dysfunction/subluxation in the cervical, thoracic, lumbar and sacroiliac joints. There was a leg length discrepancy of 22 mm (greater trocanter to medial malleolus).

Diagnoses included post-menopausal osteoporosis, multilevel spinal joint dysfunction/subluxation, disequilibrium from proprioceptive dysfunction and deconditioning.

Intervention and Results. The patient agreed to a course of non-thrust manual techniques comprising soft-tissue stretches and joint mobilization. In addition she was provided with a right shoe lift and taught proprioceptive exercises to facilitate plantar proprioception - which included barefoot walking and Janda 'small foot' exercises (repetitive or prolonged contraction of the plantar or deep intrinsic foot muscles). Office care was provided twice weekly for 6 weeks then once per week for a further period of 6 weeks. The patient noted an immediate decrease in vertigo and within 4-5 weeks was able to resume walking and driving. Within 12 weeks she had resumed all her activities of daily living. She continues in-office care once monthly to manage minor recurrences of vertigo which the patient estimates as 5-10% of severity prior to chiropractic.

psoas gave relief to all muscle groups. The patient was told to continue stroking her foot and the scar, and to perform auto relaxation of her iliopsoas. When next seen she had obtained almost complete relief from pain and tenderness.

These cases, says Lewit, illustrate the chain reaction of the motor system. The second case illustrates a chain reaction to the visceral disorder of appendicitis. There were expanding symptoms for years after surgical treatment until dysfunctions in the locomotor or neuromusculoskeletal system were properly addressed.

F. Conclusion

11. Perhaps the ultimate goal for some patients is no external force at all. That is the essence of Positional Release Therapy, and of the McKenzie Methods approach to mechanical diagnosis and therapy. In this physical therapy approach, which is now supported by sound research and is being increasingly integrated into chiropractic education and practice, it is the patient's movements that centralize then relieve low-back and leg pain. Chiropractors using this approach as an additional diagnostic method find that it provides valuable biomechanical information influencing their choice of adjustive technique to resolve underlying joint dysfunction/subluxation.

Some chiropractors, including those who make little use of soft-tissue techniques and those who view everything chiropractors do as intrinsically separate and distinct from other manual care, may be uncomfortable about this integration of knowledge from other disciplines. To them it is suggested:

• There is an unprecedented amount of new research and knowledge now emerging in most areas of human experience, including all the health sciences.

• The field of functional pathology of the neuromusculoskeletal system, including its optimal diagnosis and management, is no exception. Indeed, as Lewit says, this is a complex specialty in its relative infancy. No one profession has mastered the field, but one will become recognized as having a leading presence and expertise in the next millennium.

• Plainly this will be the profession that is seen by the public and the health care system as the most knowledgeable and skilful. There is only one road to that position - it is absorbing all that is relevant and valuable regardless of source, and leading the research agenda.

• Learning from and incorporating the best of others is what the founders of chiropractic did. It is what Nimmo did, and it is what current leaders in chiropractic are doing - especially in the burgeoning fields of sports chiropractic and rehabilitation. Many movements and technologies that once led the way in their worlds, as chiropractic does in its world, have now been supplanted - radio, the long-playing record, surgery for back pain and the Soviet empire. If chiropractors wish to remain preeminent in manual care they must continue to investigate it in all its forms. TCR

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