THE CHIROPRACTIC REPORT

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MIGRAINE

Introduction

1. There is now clear evidence that chiropractic treatment is effective in the management and cure of both common and classical migraine. This has been accepted by government inquiries[1] and medical researchers[2,3]. I deal with the evidence below (para 11).

2. Many chiropractors prefer not to speak of treating 'migraine' or other specific conditions. They rightly argue that chiropractic has a wider concern. The principal aim of chiropractic is to:

(a) diagnose joint dysfunction or subluxation — i.e. specific restriction from normal joint movement.
(b) correct this, principally through adjustment by hand
(c) thereby restore normal function to the joint *and affect all related neurophysiology — all interference with the nerve supply, blood supply, etc.*

Relief of migraine is but one result of this more general therapeutic aim.

• The work of Stuart Wight DC in Scotland (see para 11 below) provides an interesting illustration of this. In a prospective study of migraine he conducted with 87 patients in his practice over 50% did not initially attend for either migraine or headache. They had other symptons of primary concern but, under chiropractic treatment, discovered relief from migraine also.[4]

3. However a patient who has suffered from migraine, and is relieved or cured under chiropractic care, naturally sees the chiropractor as simply treating migraine, and thus the title of this article.

4. Migraine headache is one of the most common neurological disorders, with an estimated prevalence of 5% to 25% in western society. Approximately 70% of patients with migraine are women.[5]

5. Extensive clinical experience and research in chiropractic, medicine, and osteopathy has suggested various causes for migraine, and there are a number of plausible hypotheses as to the exact mechanisms involved. Some are now considered. However no one in health care can be dogmatic as to causes and mechanisms, and new theories are still emerging as knowledge increases.

Causes of Migraine — Mechanisms

6. It is most interesting to see that in the recent scientific literature medical and chiropractic views are becoming more similar.

• Michael Anthony, a senior Australian neurologist, writing this year in the Australian Family Physician, states that "while the pathophysiology of migraine remains uncertain" it is now known that there are "common aggravating factors" which "should be corrected before instituting antimigraine therapy" (by which he means drug therapy).
One factor is "cervical spondylosis" with neck stiffness and pain.
"When this is recognized appropriate treatment can give impressive results . . . The aim is to relieve pressure on nerve roots and the upper neck, thereby reducing activation of the spinal tract of the trigeminal nerve, which is part of the pain centre in the head and neck . . . Anti-migrainous drugs are generally not effective in this condition".[6]

• Anthony's research currently centres on the role in migraine of the occipital nerve which, he points out, has the upper three cervical roots as components. It is the connections between these and the trigeminal nerve that form the pain centre for the head.

7. This seems to be in complete agreement, as far as it goes, with modern chiropractic hypotheses. Recent chiropractic articles that address this subject comprehensively are those by Wight[7] (1982) and Vernon[8] (1985).

• Howard Vernon's paper is a thorough review of the literature followed by 2 detailed explanations of how chiropractic adjustment likely achieves the impressive results it does with migraine.

8. The first relates to the case where the primary problem is in the lower cervical or upper thoracic spine. The suggested mechanism, in simple language, is joint stiffness, giving:

• Interference with the nerves at the level in question, either by the direct action of the vertebra or associated muscle spasm, causing pain.
• On account of the pain, an altered input or signal from those nerves to the central nervous system (CNS).
• By reflex response to the altered input, an altered output from the CNS to the autonomic nervous system (ANS) causing loss of autonomic regulation — i.e. loss of control of various functions regulated by the ANS, one of which is level of blood supply.
• Once a certain threshold level is reached, because of sustained pain and imbalance in the autonomic regulation, a migraine is triggered.

Professional notes:

Statistics on Back Pain — The Boeing Study

(continued from Promotion Issue)

Findings from the Boeing Study include:

1. "Claims relating to back injuries constituted 19% of all workers' compensation claims, but were responsible for 41% of the total injury costs." (Boeing did well — most Workers' Compensation Board studies show that back injuries constitute approximately 30% of claims and account for 50-60% of total claims costs.)

2. A tendency was noted "of back injury claimants to have multiple claims compared with the non back injury claimants." (Spengler, 241).

3. A small proportion of the low back claims (10%) accounted for most of the cost (79%), and this was consistent with a California WCB study which showed that 24% of cases accounted for 87% of cost. (Spengler, 241)

4. *94% of all back injuries were in the strain/sprain category.* (Bigos, 247)

5. 'Materials handling' was the most common type of injury, representing 56% of high cost claims and 19% of low cost claims. (Bigos, 247)

6. 'Improper lifting' was the major cause of back injury. This cause was more than twice as frequent as any other, and accounted for a third of the high cost back injuries and a half of the low cost injuries. (Slips and falls were found to be comparatively insignificant.) (Bigos, 247)

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9. Vernon's second hypothesis relates to problems primarily in the upper cervical spine and is:

- Stiffness and pain in the upper cervical spine, producing
- Increased nerve activity or 'facilitation' in that region.
- This reduces inhibition or dampening of pain in descending nerve pathways.
- The increased descending pain produces facilitation in nerves at a lower level e.g. the spinal tract of the trigeminus.
- These lower nerve centres, once a threshold level is reached, react to constrict blood supply to the head.
- A migraine attack results (with vasodilation of the extra-carotid supply and pain mediated by the ipsilateral trigeminal nerve).

10. Wight's 1982 paper[7], published in the European Journal of Chiropractic, has much additional comment of value. He draws attention to the significant point, first commented upon by Illi DC in 1951, that a problem in the cervical spine may be secondary to a sacro-iliac subluxation. This, accordingly, should not be neglected. Wight, a chiropractor with considerable clinical and research experience in this area, estimates "approximately 5% of migraine patients require adjustment of (the sacro-iliac joints) to recover fully".

Evidence of Effectiveness

11. Perhaps the most thorough prospective study of patients in chiropractic practice is that by Wight published in the ACA Journal of Chiropractic in 1978.[4] This reviews earlier studies since 1928 which report success rates (cure or marked improvement) between 72% and 90%. Wight's success rate in a well designed study of 87 consecutive patients was 74.7%. Other important points include:

- This success rate was maintained 2 years after treatment ended.
- The improvement rate applied equally to common and classical migraine, and for male and female patients.

12. However while the above evidence is of value it is far from conclusive. To establish the effectiveness of a treatment without question it is necessary to have randomized, controlled, trial evidence where chiropractic treatment is compared with other interventions.

13. Such a controlled trial of chiropractic adjustment for migraine was performed by chiropractic and medical researchers in Australia in 1976, with results published in 1978[9] and 1980.[10] This trial, known as the Parker trial after the principal researcher, was commissioned and funded by the Australian Federal Government expressly to determine whether or not chiropractic adjustment provided an effective treatment for migraine. It found that it did.

14. Points of interest concerning the Parker trial include:

- The 85 patients in the trial had suffered regular migraine attacks for an average of 19 years. They were divided into 3 groups — one receiving chiropractic adjustment, one medical/physiotherapy manipulation, and one medical/physiotherapy mobilization.
- All 3 treatments proved to be effective, but the chiropractic results indicated superiority on all measures reported — complete cure, frequency of attack, mean duration, mean disability and mean intensity of pain.
- A New Zealand Commission of Inquiry into chiropractic, which called Dr. Parker as a witness and subjected his trial results to further expert statistical analysis in 1978, confirmed:

i) The trial clearly established that chiropractic was an effective treatment for migraine.[11]

ii) Data re-analysis showed other areas of superiority of chiropractic treatment — for example better performance in the treatment of classical migraine.[12]

- Parker's second paper in 1980 reports on a follow up study of the patients at 20 months. It is frequently alleged in trials that mere participation leads to improvement through a placebo effect. As patients in each treatment group had improved the follow up study was to test whether the initial improvements recorded in fact related to the treatments — or rather just trial effects.

It was found that those who improved at the time of the trial were those who, at 20 months, maintained their cure or continued to improve. Parker concluded that "in the present trial there was little evidence to suggest that placebo factors or trial affects made a significant contribution . . . ". The effectiveness of the treatment was confirmed.

- Medical researchers who have since reviewed the Parker trial have commented that it was *"a well conceived and excellently executed double-blind controlled trial"*[2] and noted that *"when the second publication is taken into account Parker et al have provided a unique and socially important contribution to the literature relating to chiropractic manipulation of the neck for migraine"*.[13]

Bias

15. The last quote comes from Hall, a medical biostatician writing in the Australian and New Zealand Journal of Medicine in 1982. He, as with others,[14] was critical of the statistical methods adopted by Parker and his fellow researchers, which served to hide the superiority of the chiropractic treatment results.

- There seems to be clear evidence of bias against chiropractic in the reporting of the Parker trial. Perhaps the most glaring example is that, whereas the specific question asked by the Government Commission of Inquiry had been 'whether chiropractic treatment was effective for migraine', Parker et al were unwilling to provide any direct answer when they found it was.

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Full Spine Analysis and Treatment — Better Trial Results

'Chiropractic Treatment of Low Back Pain: A Prospective Study', Brontford G, JMPT (1986) 9(2):99-113. **PN2.** 'The Efficacy of Manual Treatment in Low Back Pain: A Clinical Trial', Arkuszewski Z, Manual Medicine (1986) 2:68-71. **PN3.**

A number of medical trials of manipulation have concluded that manipulation produces good short term results but that, in the end, patients are no better off. The point just made above is that many of these trials test a few standardized manipulations that bear no resemblance to what happens in practice. In chiropractic research, 2 recent examples of which are the Palmer trial and Gert Brontford's above study in Denmark, researchers are *testing the effectiveness of what actually happens in practice* — full spine analysis, correction of subluxations at whatever level they are found, and response to the individual's needs on each particular visit.

Arkuszewski's trial is a recent medical trial from Poland which adopts the same approach. He lists and criticizes the previous medical trials which involved "standard manipulations" and explains that in his trial treatment was "applied to the whole spine i.e. to all segments with functional disturbances of movement, and not exclusively to the painful area." Each session was "planned according to the present state of the patient." (P.70)

It is noteworthy that in these recent trials there are much better results than in previous trials — and follow up studies by Brontford (1 year) and Arkuszewski (6 months) show that these good results are *not* short term but *maintained long after treatment ends*.

X-ray — Use of Dynamic Views in Practice

An article in Spine by Dupuis et al (the authors include David Cassidy DC, and William Kirkaldy-Willis MD) is of value to those interested in the clinical effectiveness of dynamic X-rays, and deciding whether or not to use them in their practices. The article, the product of joint medical and chiropractic research, concludes:

> "The physician who mans the trenches in a busy back clinic needs a simple and quick method to determine if motion segment laxity is present. We have found that the use of dynamic roentgenograms obtained both in flexion/extension and sidebending proved to be a simple and reliable method to determine this." ('Radiologic diagnosis of degenerative lumbar spinal instability', Dupuis et al, Spine (1985) 10:262-276) **PN4.**

Aspirin — Use & Abuse for Low Back Pain and Generally

Anderson et al, specialists from a pain control clinic in South Dakota, U.S.A., have these interesting comments concerning use of aspirin.

(a) "The inhabitants of the United States collectively consume 20,000 tons of aspirin a year, or 225 tablets each."

(b) In the U.S. over $900,000,000 is spent each year on over-the-counter medications, with $100,000,000 being spent on aspirin alone.

(c) In a 1979 study by Seres and Newman, patients with chronic low back pain were moved from treatment under a straight medical model to a multi disciplinary model — not using chiropractic, but you could say as a fair summary treating the whole person as in chiropractic rather than using the more limited medical approach.

> "Analgesia use was found to *decrease from 87% to 5%*. A high success rate of over 80% was maintained at follow up three months after treatment."

('Multidisciplinary Management of Patients with Chronic Low Back Pain', Anderson et al, Clin J Pain (1985) 1(2):85-90.') **PN5.**

Whiplash — Medicine acknowledges benefit of early mobilization

Medicine has generally preferred to immobilize and rest sore necks and backs, and has criticized the early active intervention basic to chiropractic care.

'Early Mobilization of Acute Whiplash Injuries', a paper from orthopaedic surgeons and a physiotherapist at an Irish hospital published in the British Medical Journal on March 8, 1986, endorses early active treatment. Points are:

1. The *standard treatment* for acute whiplash is acknowledged as being "rest and initial immobilization with a soft cervical collar."

2. *"Because the efficacy of this treatment is unknown"*, a study was performed on 61 patients comparing the standard treatment with early active treatment (ice in the first 24 hours, then "neck mobilization using the Maitland technique and daily exercises of the cervical spine." i.e. something more tentative than an adjustment, but a form of manipulation.)

3. "At 4 weeks a significant increase in cervical movement occurred in those patients given active treatment but not in those given standard treatment." (657).

4. Improvement in pain was "significantly greater in the group given active treatment" at 4 weeks. (657).

5. At 8 weeks (which was the final follow up in the study) "the degree of improvement seen in the actively treated group compared with the group given standard treatment was *significantly greater for both cervical movement and intensity of pain*." (656/abstract).

(Mealy et al, Brit Med J (March 8, 1986) 292:656-657) **PN6.**

Publication of this study brought a letter to the editor from a Dr. Hashemi, writing from an English hospital accident and emergency department congratulating the researchers *"for their valuable work on such a common and frequently badly managed problem*. I agree with them that early active mobilization is the correct approach." (Brit Med J (April 1986) 292:1079) **PN6.**

"Anybody can manipulate; that is easy. What is difficult is to decide who to manipulate and when . . . *users of this modality should have high quality post-graduate training* . . . Many chiropractors are extremely skilled."

(Ms. Stephanie Saunders, an English physiotherapist who worked with Cyriax and is a course organizer and lecturer for the Society of Orthopaedic Medicine, London, founded by him — speaking to the June 1986 Annual Congress of the Canadian Physiotherapy Association. 'Universal Perspectives: Physiotherapy Around the World', Saunders, Physiotherapy Canada (September/October) 38(5):299-304). **PN7.**

• It should be remembered that Dr. Parker, a psychiatrist from the University of New South Wales, Sydney, did not choose to do this research and was in an awkward position. The trial was at the direction of the government in response to a conflict before a Committee of Inquiry investigating chiropractic in Australia. Chiropractors (and some medical manipulators) claimed high success rates with migraine, medical experts were outspoken in denying the truth of these claims. Dr. Parker ran the risk of showing his medical colleagues to be ill informed and wrong, and then did.

• It is interesting, but sad, to see that medical bias has not stopped with reporting of the trial. While some, like Hall, are to be congratulated upon recognizing the social importance of this trial evidence and its implications for patient care, others[5,6,15] have ignored it in their reviews of the literature.

Anthony,[6] in particular, could not be unaware of the trial. It was performed by a colleague on the same university faculty, the University of New South Wales, Sydney. In his 1986 article on the management of migraine he acknowledges the impressive results which can be obtained with physical treatment. He then completely overlooks chiropractic treatment and any other form of spinal manipulation, and recommends various forms of physiotherapy (heat, ultrasound and traction) none of which is supported by any clinical trial evidence at all.

Conclusion

16. Everyone acknowledges that there seem to be many factors that trigger migraine attacks, and it is known that some patients will not respond to chiropractic treatment.[7]

However the evidence of general effectiveness of chiropractic treatment is now compelling — with both common and classical migraine and all categories of patients. A reason for this effectiveness, commented upon by both chiropractic and medical researchers, seems to be that stiffness and pain in the cervical spine is a frequent and major factor.

• 10 years ago it was unusual for a medical practitioner to refer a patient with migraine for chiropractic care. In many jurisdications it is now common and the exciting research findings of recent years explain why.

Chiropractic care is not only proven effective. It is also non invasive, and makes no use of drugs. There seems to be a logical case for it being the treatment of first choice for most patients.

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Professional Notes: — *continued from page 1*.

These 1986 statistics clearly document the importance of chiropractic in occupational health — the most frequent and expensive injuries are of a type readily amenable to chiropractic care. The work of Kirkaldy-Willis and Cassidy shows how well chiropractic can succeed with the relatively small percentage of back claims that provide the greatest cost.

Most WCBs have evidence that "back injured employees who miss work for more than 4 months seldom return to their jobs" (Bigos, 246) so there is an especially strong case for chiropractic treatment at an early stage.

Palmer College Trial Published

Manual Medicine, the official journal of the International Federation for Manual Medicine and an offshoot of the original German Manuelle Medizin, has just finished its second year. It is the only significant medical journal in the area of medical manipulation. Its editors are from Europe, North America, Australia and New Zealand. The only chiropractor among them is Scott Haldeman.

The latest issue of Manual Medicine contains 2 interesting pieces of chiropractic research, a trial from Palmer College and a paper on synovial joint inclusions from Lynton Giles DC, Western Australia.

The Palmer trial is only a pilot study, involving 19 patients. However it is of interest because:

1. It is a properly controlled clinical trial of chiropractic.

2. It is arguably the best designed trial of any form of manipulation to date, whether by chiropractic, medical or osteopathic researchers. For example the non treatment group was blinded more effectively than in past trials, receiving a well defined sham adjustment and associated massage. Also the treatment being tested was of greater clinical relevance — adjustments anywhere in the spine and pelvis as thought necessary by an experienced chiropractor. (Past trials have been criticized for just using a few standard manoeuvers that bore no resemblance to rational practice.)

3. The trial related to chronic patients who had experienced LBP for an average of 3.6 years. After receiving chiropractic adjustments 2 or 3 times a week for 2 weeks "both objective and subjective measures showed significantly greater clinical improvement in the experimental than in the controlled group."

The report of this trial will be widely read since it is published in a major medical journal.

'A Short Term Trial of Chiropractic Adjustments for the Relief of Chronic Low Back Pain', Waagen, Haldeman, et al, Manual Medicine (1986) 2(3):63-67. **PNL**