

Professional Notes

Headache - Increasing Prevalence

Sillanpää M, Anttila P (1996) *Increasing Prevalence of Headache in 7-year Old Schoolchildren*, *Headache* 36:466-470.

General and migraine headaches are becoming much more common, for both adults and children. The above study from Finland repeated a 1974 survey of all 7-year old children starting school in the town of Turku.

In 1974 14.4% of 1927 children suffered from headache and 1.9% from migraine headache. In 1992 51.5% of a similar number of 7-year olds suffered from headache, 5.7% from migraine. Given the same methodology in both studies, and the same physical school environments, the researchers suggest that it is the social environment that explains this highly significant increase which is "an alarming sign of the stressful life and ill-being of children."

The researchers reference two recent US studies reporting increased prevalence for adults:

a) The first, based on US national statistics, showed the prevalence of migraine has increased by nearly 60% from 1980 to 1989, from 25.5 per 1000 persons to 41 per 1000 persons. (Highest increase was in women younger than 45 years. No figures were given for pediatric ages).

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THE CHIROPRACTIC REPORT

An international review of professional and research issues, published bimonthly
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The Source of Chronic Pain After Whiplash

"In every era of the history of medicine, the outstanding leaders have combined two attributes: a profound devotion to the humane care of patients and an extraordinary capacity for erroneous follies and fallacies in cause-effect reasoning used for the care. The errors in etiological and therapeutic concepts depended on ideas called *paradigms* - the fundamental beliefs from which basic operating principles and strategies are derived.

The history of medicine offers many examples of wrong paradigms that were widely accepted in one era, but corrected in another. The sceptical persons with insight and courage to question the paradigms were the *outliers* people who chose to observe rather than theorize, to think for themselves rather than passively accept authoritative dogmas, and to make and maintain decisions that contradicted the paradigms.

The *outlier* people took the risk of expressing their observations, exposing the errors, and then receiving the establishment's retaliation: castigation, calumny, and efforts at suppression from leaders whose careers depended on maintaining the attacked paradigms. The people we remember and honour are the skeptics who nevertheless endured and prevailed."

Alvin R. Feinstein, MD Professor Medicine and Epidemiology, Yale University.¹

A. Introduction

1. These general observations from a senior and respected epidemiologist can be applied to the diagnosis and management of common neck and back pain.

The medical paradigm of rest, wait-and-see, medication and modalities for common or non-specific back pain and neck pain is being replaced by the traditional chiropractic paradigm of early return to daily activities of living, exercise, and manipulation and other manual treatments that restore range of motion and

function to muscles and joints.^{2,3,4}

A major difficulty has been lack of evidence of the exact source or sources of the pain - which explains the description 'non-specific' pain. This debate rages on. There are many pain-sensitive tissues at each level of the spine, including the disc, posterior facet joint capsules, ligaments, fascia and muscles. They are all adjacent to one another and mechanically linked.

To make things more complex the spinal nerve leaving the spinal cord at each vertebral level, especially in the lumbar spine, soon branches to innervate tissues in adjacent joints above and below.

At a meeting of foremost international experts today there is no agreement on the source or sources of the pain.⁵

Kirkaldy-Willis talks of the three-joint complex at each level of the spine to emphasize that there may often be more than one source - the biomechanical change at the disc, through loss of height caused by aging or herniation, has an impact on the alignment and function of the two facet joints at that level.⁶

The most common symptoms of a motor vehicle whiplash injury are headache and neck pain. Few medical practitioners consider the cervical spine as a possible source of headaches.

For neck pain physicians recognize general diagnoses such as strain or muscle dysfunction but few consider or would know how to diagnose cervical facet joint pain.

2. Into this maelstrom now comes a watershed study from outliers in Australia published in the leading journal *Spine*, a study that will force a change to the mainstream paradigm for chronic headache and neck pain after motor vehicle whiplash injuries. In this new randomized controlled study that culminates 10 years of prolific research in their field, Lord, Barnsley, Wallace and Bogduk from the Cervical Spine

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International Meetings: ECU Annual Meeting, Symposium on Pain May 8-10, 1997, Amsterdam, The Netherlands, Contact: Bureau PAOG-Amsterdam, ECU Conference 1997, Tafelbergweg 25, NL-1105 BC Amsterdam, Tel: +31-20-566-4801 Fax: +31-20-696-3228. E-Mail c.walta-paog@inter.nl.net.. World Federation of Chiropractic, Cervical Spine Symposium and World Congress, June 4-8, 1997, Tokyo, Japan. Contact: Maria Patino WFC, 78 Glencairn Avenue, Toronto, Ontario, Canada M4R 1M8, Tel: 416-484-9601, Fax: 416-484-9665.

Research Unit, University of Newcastle, New South Wales, Australia.⁷

a) Note that "few medical practitioners recognize the entity of cervical zygapophysial (*facet*) joint pain".

b) Report a study described by *Spine's* expert commentator as "rigorous and impeccable" which finds that this is the definitive cause of chronic head and neck pain in 60% of patients with chronic neck pain after motor vehicle whiplash injuries.

c) Assert that the evidence from the past 10 years is now "compelling", that cervical facet joint pain is "extraordinarily common", and that this diagnostic entity and cause of pain "cannot be ignored" any longer.

3. Their results confirm the findings of a similar study, except that it lacked the control placebo, last year.⁸ They are consistent with and lend new authority to treatment guidelines published by the Quebec Task Force on Whiplash Associated Disorders last year.⁴ They are of obvious public interest and importance because:

a) Chronic neck pain after whiplash "is the most controversial, costly and perhaps common form of neck pain."⁹

b) For the 68 patients in this study pain had been present an average of 54 months (from 7 months to 44 years). 34% were unemployed, 41% were in modified work and only 25% were employed in the same capacity as before the motor vehicle accident.

c) Facet joint pain had not been recognized for any of these patients, yet all were tender to palpation and 87% exhibited a limited range of cervical motion. (This refers to general range of motion. There was no motion palpation to test for specific segmental dysfunction/subluxation). Together these findings suggest that many of the patients would have responded well to chiropractic management, the main treatment of which, chiropractic adjustment or manipulation, is specifically directed at the facet joints.

For these reasons the new study is also of particular importance to the chiropractic

profession and is therefore reviewed in depth in this Report.

B. Background

4. Most of the evidence on a specific diagnosis of cervical facet joint pain has been published since 1990. Accordingly it is new but, as Lord et al state, is "compelling". In essence this is because:

a) The cervical facet joints are richly innervated with pain fibers - the medial branches of the cervical dorsal rami.

b) Studies of health volunteers have shown that distention of these joints with contrast medium provokes neck pain and typical patterns of referred pain - see Figure 2.¹⁰

c) Studies have shown that neck pain can be relieved by:

i) Chiropractic manipulation, which gaps the facet joints, both reducing pain and restoring range of motion at the specific vertebral level and generally in the cervical spine.^{11,12}

ii) Anaesthetizing the joints with intra-articular injections of local anaesthetic.^{13,14}

iii) By blocking the nerves that supply these joints.¹⁵

iv) By injecting steroids.¹⁵

However these studies have not looked at how frequent or prevalent cervical facet joint pain is. That was the purpose of the present study, and chronic neck pain after whiplash injury was chosen because it is the most controversial and costly form of neck pain.

C. Methods

5. **Patients.** The study comprised 68 consecutive patients referred to a hospital cervical spine research unit for assessment of chronic neck pain after a motor vehicle accident whiplash injury. Further criteria for these patients were:

a) They had to have experienced neck pain for more than three months. (This was the definition of chronic - in fact average duration of pain was 54 months, with a range of 7 months to 44 years.)

b) Prior consultation with a medical specialist.

c) A whiplash classification of Grade I-IV according to the Quebec Task Force Report. (In other words, patients with Grade 0 were excluded. All patients satisfied Grade II - neck pain, stiffness or tenderness and musculoskeletal signs. 41% also satisfied the criteria for Grade III - Grade II plus neurologic signs.)

6. **Examinations on Entry to Trial.** (Baseline clinical assessments). These included a comprehensive history and physical examination, completion of visual analog scales of pain severity, and McGill Pain Questionnaires. A psychological symptom checklist was administered by a psychologist. Relevant radiological examinations were available for all patients.

7. **Interventions.** These were anaesthetic (active) and placebo (inactive) injections into specific cervical spine facet joints suggested by each patient's pain distribution or referral pattern. Important preliminary points that need to be made are:

a) The protocol was based on a wealth of pain specialist and diagnostic joint block evidence by these and other researchers, all listed in the references.

b) Various of these prior studies have shown that neck pain can be blocked and relieved by anaesthetizing cervical facet joints with injection of local anaesthetic into the joint.

c) However single injection blocks have been found to have a false positive rate of about 1 in 4 (27%) which makes them too unreliable. This problem has been overcome by use of two different anaesthetics/blocks, one with shorter and one with longer duration of action. A positive result exists where the patient gets relief with each anaesthetic and longer acting relief with the longer acting agent.

(Lord et al argue, convincingly you may think, that there is really no need for a sham/control injection. The two different local anaesthetics provide their own

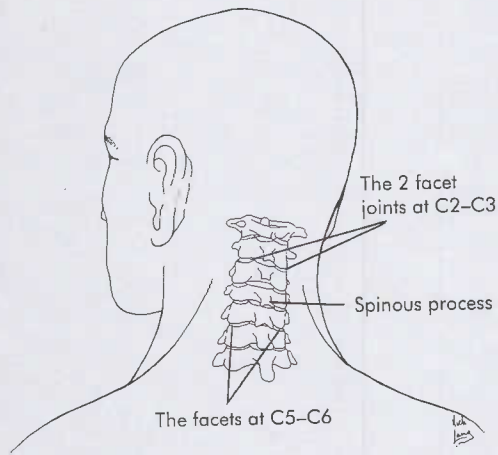
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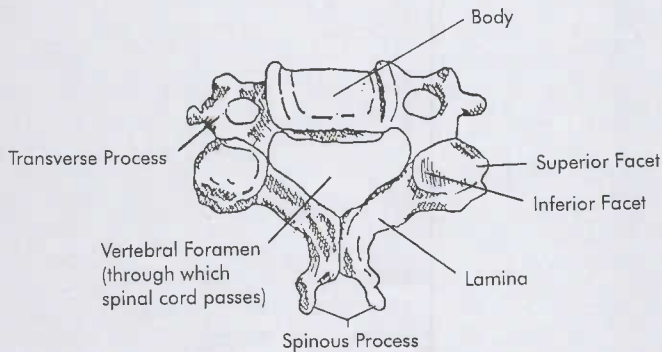
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Figure 1

The Vertebrae of the Cervical Spine



Structure of a typical Cervical Vertebrae



Modified from Chiropractic Technique, Bergamann Peterson & Lawrence, 1993

control. Their previous study was designed on this basis. However in this new study patients received the sham injection also to provide a true control or placebo and undermine the skepticism they have experienced from their earlier results, which were challenged to current medical thinking on the origins of neck pain.)

d) A further point is that a study with placebo controlled joint injection blocks cannot investigate pain from the C2-C3 joint. This is because the third occipital nerve, which services this joint, has a branch to the skin. As a result numbness or lack of numbness in the cutaneous area of that nerve would make it apparent to patients whether they had received the active or inactive injection. There is no such cutaneous distribution for facet joints below C2-C3.

Accordingly in this trial patients had to be screened for C2-C3 pain.

8. The intervention used in this study was:

a) Patients with headache as the major symptom, and therefore most likely to have C2-C3 joint pain,¹⁶ underwent active third occipital nerve blocks at C2-C3. If that relieved their pain completely they received no further intervention. If not, they joined the rest of the patients in receiving placebo control blocks in joints below C2-C3 - that is from C3-C4 to C6-C7.

b) Those receiving placebo-controlled blocks first received either short acting (lidocaine 2%) or long acting (bupivacaine 0.5%) anaesthetic, chosen randomly, at the joint level suggested by the pain distribution (see Figure 2).

Each injection was performed under image-intensifier guidance, using two target points for the two nerve branches in the two joints at that vertebral level as established in previous research, and in the presence of an independent specialist observer who corroborated radiographic position of the needle before injection.

If this produced pain relief, the patient received two more blocks each separated by at least one week - the other active agent and the placebo (saline) in random order.

c) If the first injection did not produce pain relief it was repeated at adjacent and lower levels until pain relief was obtained or all relevant joints were excluded as the source of pain. If there was pain relief at a lower level there were then two more blocks on the same basis as described above.

d) The patient and the operator were both blinded to the order of administration of the agents/blocks.

e) Pain relief was assessed by telephone interview with the patient on the evening of or the day after the block. A positive response was accepted only if "the patient reported complete or profound pain relief." Partial relief was considered negative because it could be consistent with normal fluctuation. Overall, a positive diagnosis was found only where:

i) *Below C2-C3* (placebo-controlled block): "The patient's pain was relieved completely and reproducibly by each of the local anaesthetic blocks but not by the placebo injection."

ii) *At C2-C3* (two active blocks only): "The patient's pain was completely and reproducibly relieved by two different local anaesthetic blocks, and the patient correctly discriminated the longer acting of the two local anaesthetics used."

D. Results

9. These were:

a) Neck pain was the dominant symptom for 41 patients, headache for 27. (Other common symptoms were disturbance of concentration and/or memory; parasthesia in upper limbs; weakness or heaviness in arms; dizziness; and visual disturbance. 18% had back pain).

b) All 68 had Grade II whiplash within the classification of the Quebec Task Force, 28 (41%) had Grade III whiplash. 3 had had fracture or dislocation but this was not considered a cause of chronic pain because the injuries had healed.

c) 16 patients withdrew but, for reasons discussed at some length, were not regarded as differing in any significant way from the remaining ones. Of the remaining 52:

i) 22 presented with dominant headache and 11 of these (50%) had C2-C3 facet joint pain relieved by injection.

ii) 41, being the 11 with dominant headache who did *not* have C2-C3 pain and the 30 with dominant neck pain, had placebo-controlled blocks of cervical facet joints below C2-C3.

Of these, 20 (49%) had facet joint pain - "they obtained complete relief from their neck pain after each of the local anaesthetic injections but no relief after injection of normal saline".

iii) Overall 31 of 52 patients (60%) had cervical facet joint pain at C2-C3 or lower levels.

iv) Most common levels for symptomatic joints were C2-C3 (17.5%) and C5-C6 (10%). Further investigation showed that 5 patients - but only 5 - had facet joint pain at 2 or 3 levels.

v) There were no statistically significant differences between the 60% of patients with facet joint pain and those without - either in terms of demographic consequences, or mode of accident, history of pain, clinical examination findings, or psychological profile.

vi) On a worse case analysis, on which all those who withdrew are assumed not to have had facet joint pain, there would be a prevalence of 46%. On a best case analysis the prevalence would be 73%.

vii) Lord et al conclude that "for patients with chronic neck pain after whiplash injuries cervical zygapophysial joint pain is extraordinarily common. As a diagnostic entity it cannot be ignored. Establishing (this) diagnosis allows appropriate treatment to be delivered specifically to the symptomatic joint."

E. Treatment

10. Lord et al mention the obvious benefit of establishing an exact diagnosis - providing the basis for "appropriate treatment directed specifically to the symptomatic joint." However as they indicate in their one paragraph discussion of treatment, and as was stated last year by the Quebec Task Force when it provide management guidelines for whiplash-induced neck pain, there is little strong scientific evidence on treatment. In summary:

a) The treatment approach with the best evidence, now reinforced with this study, is early activation - joint manipulation, mobilization and exercises. This may be combined with analgesics or non-steroidal anti-inflammatory agents (NSAIDs). Rest or inactivity probably prolongs disability. There is little or no evidence supporting the effectiveness of soft cervical collars or pillows, physical therapy modalities, massage, epidural or intrathecal injections, muscle relaxants and psychosocial interventions.⁴

b) Medical treatments directed specifically at the facet joints, discussed by Lord et al, are principally steroid injections (not shown effective in the one controlled trial that has been performed¹⁷) and severance of the medial branch nerves by radiofrequency neurotomy. (The first controlled trial is underway - published clinical series report "modest results" only).

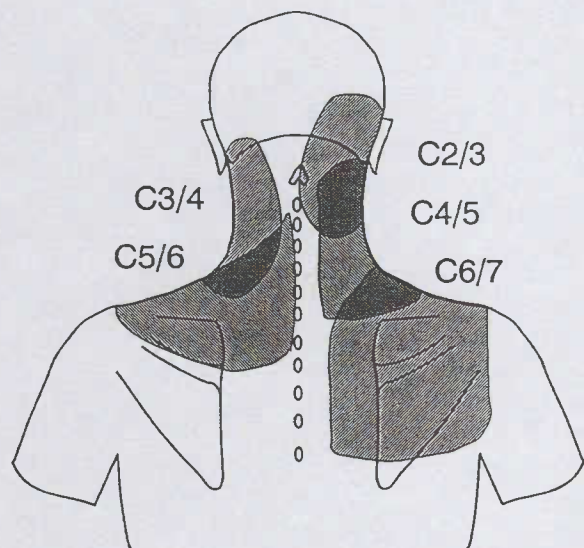
Chiropractors would suggest that, even if the evidence for these interventions was as strong as for skilled manual therapy and exercise, it would be logical to commence with a chiropractic approach because it is less invasive and more cost-effective and safe.

F. Conclusion

11. US commentator Richard Derby MD²⁴ from Daly City, California, invited by *Spine* to write a *Point of View* that is published with the Australian study, declares its design methodology as "rigorous and impeccable" and supports its conclusions. This new evidence from Australia obviously challenges those who continue to say that chronic pain in whiplash victims is largely in the mind and caused by expectation of disability and the medico-legal context.

Earlier this year *Lancet* published a retrospective survey by Norwegian researchers¹⁸ comparing chronic neck pain in auto accident victims and the general public in Lithuania. They suggested that chronic pain after whiplash was not commonly caused by the accident - it was caused by expectation of disability, the medicolegal context and pre-existing problems. The

Figure 2
Typical Distribution of Referred Pain from Facets



From Lord et al 1996

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survey, however, had many design limitations. Major weaknesses were that it was a retrospective observational study only and survey participants were chosen because they were in an accident not because they had suffered injury. Many accidents were slight, and only 31 of 202 (15%) accident respondents remembered any acute pain after the accident. The much more robust Australian research, which postulates and looks for an objective cause of pain rather than assuming pain is all in the mind, reveals that the majority of patients had specific and ascertainable physical complaints.

12. The paradigm - to use Feinstein's word - for management of common neck and back pain is clearly changing. The "etiological and therapeutic concepts" of the traditional medical paradigm have *not* included the diagnosis and treatment of biomechanical dysfunction of joints and muscle. Soft tissue injuries have been regarded as having a natural healing period. Healing and pain relief should be managed with rest and medication. Chronic pain after the natural healing period is real - but likely psychosocial.

The emerging paradigm, based on the evidence of the past 10 years and found in interdisciplinary evidence-based management guidelines in North America and Europe,^{2,3,4} is biopsychosocial - recognizing physical, psychological and social factors. It is based upon early activity and restoration of biomechanical function. No longer is it sufficient that tissues heal and are pain free during restricted activity. Individual joint dysfunction/subluxation and specific trigger points and other restrictions in muscle must be diagnosed and treated for early and lasting results.

This represents strong vindication for traditional chiropractic practice. However chiropractors, in the same way as others, have often been guilty of over-emphasis on a single cause. The future will see more and more interdisciplinary management, which will be satisfying for everyone - especially the patient.

References

1. Feinstein AR (1996) *Twentieth Century Paradigms that Threaten Both Scientific and Humane Medicine in the Twenty-First Century*, J Clin Epidemiol 49(6):615-617.
2. Bigos S, Bowyer O, Braen G et al (1994) *Acute Low Back Problems in Adults. Clinical Practice Guideline No.14*. AHCPR Publication No. 95-0642. Rockville, MD; Agency for Health Care Policy and Research, Public Health Service, U.S. Department of Health and Human Services.
3. Rosen M, Breen A et al (1994), *Management Guidelines for Back Pain Appendix B Report of a Clinical Standards Advisory Group Committee on Back Pain*, Her Majesty's Stationery Office (HMSO), London.
4. Spitzer WO, Skovron ML et al (1995) *Scientific Monograph of the Quebec Task Force on Whiplash-Associated Disorders: Redefining Whiplash and its Management*, Spine 20:8S.
5. International Society for the Study of the Lumbar Spine, New York, as reported in *The Back Letter*:11(9),101.
6. Cassidy JD, Kirkaldy-Willis WH, Thiel H (1992) *Manipulation Chapter 16 in Managing Low-Back Pain*, by Kirkaldy-Willis WH and Burton CV, Churchill Livingstone, New York, 3rd edition.
7. Lord SM, Barnsley L, et al (1996) *Chronic Cervical Zygapophysial Joint Pain After Whiplash. A Placebo-Controlled Prevalence Study*, Spine 21(15):1737-1745.
8. Barnsley L, Lord SM, et al (1995) *Chronic Cervical Zygapophysial Joint Pain after Whiplash: A Prospective Prevalence Study*, Spine 20:20-26.

9. Ref 7 supra, 1738.
10. Dwyer A, Aprill C, Bogduk N (1990) *Cervical Zygapophysial Joint Pain Patterns I: A Study in Normal Volunteers*, Spine 15:453-457.
11. Cassidy JD, Quon JA et al (1992) *The Effect of Manipulation on Pain and Range of Motion in the Cervical Spine: A Pilot Study*, J Manip Physiol Ther 15(8):495-500.
12. Cassidy JD, Lopes AA et al (1992) *The Immediate Effect of Manipulation versus Mobilization on Pain and Range of Motion in the Cervical Spine: A Randomized Controlled Trial*, J Manip Physiol Ther 15(9):570-575.
13. Bogduk N, Marsland A (1988) *The Cervical Zygapophysial Joints as a Source of Neck Pain*, Spine 13:610-617.
14. Bovim G, Berg R, Dale LG (1992) *Cervicogenic Headache: Anaesthetic Blockage of Cervical Nerves (C2-C5) and Facet Joint (C2/C3)*, Pain 49:315-320.
15. See the various references in Lord et al, Ref 7 supra.
16. Lord SM, Barnsley L et al (1994) *Third Occipital Headache: A Prevalence Study*, J Neurol Psychiatry 57:1187-1190.
17. Barnsley L, Lord SM et al (1994) *Lack of Effect of Intra-articular Corticosteroids for Chronic Cervical Zygapophysial Joint Pain*, N Engl J Med 330:1047-1050.

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b) The second, from Olmsted County, Minnesota, showed that from 1979 to 1981 there was a dramatically increased prevalence of migraine in persons 45 years and younger - an increase of 34 % in women and 100% in men.

These studies obviously raise important issues of prevention and management.

VBA's - Manipulation

Klougart N, Leboeuf-Yde C et al (1996) *Safety in Chiropractic Practice. Part 1: The Occurrence of Cerebrovascular Accidents after Manipulation to the Neck in Denmark from 1978-1988*, J Manip Physiol Ther 19(6):372-377.

This new study from Denmark reports that there is one vertebrobasilar accident (VBA) following chiropractic cervical manipulation for every 362 chiropractic practice years.

This represents an incidence of 1 per 1.3 million treatments, which is consistent with the RAND Report (see last issue) and other current estimates. The Danish study is noteworthy because it has excellent methodology, is based on much harder numbers than most other studies, and for the first time compares risk rates in different cervical spine regions and with different techniques.

There is a higher risk rate in the upper cervical spine (1 per 0.9 million) and Klougart et al conclude that "there seems to be sufficient evidence to justify a firm policy statement cautioning against upper cervical rotation as a technique of first choice."

VBA's - General Surgery

Langmayr JJ, Ortler M et al (1996) *Quadriplegia After Lumbar Disc Surgery*, Spine 21(16)1932-1935.

A survey (Tettenborn B et al (1993) *Postoperative Brainstem and Cerebellar Infarcts*, Neurology 43:471-477) and a case report (Fisher CM (1993) *Basilar Artery Embolism after Surgery under General Anaesthesia: A Case Report*, Neurology 43:1856) from the US published in *Neurology* in 1993 suggested that VBAs induced by neck po-

sitioning by anesthesiologists during general surgery are not rare. The Tettenborn et al study reported 10 cases over a two year period at four hospitals - the number of surgeries was not given.

Langmayr et al now report another case, this involving quadriplegia after a VBA induced by neck positioning for lumbar disc surgery. Australian surgeons report the conclusion that "in our patient a temporary mechanical occlusion of the vertebral artery during lumbar back surgery in the prone position led to stasis, formation of thrombi, and subsequent embolism to the vertebrobasilar vascular territory."

It would be interesting to know whether the incidence is higher or lower than for manipulation.

International Notes

- **Trinidad & Tobago.** A report just released recommends legislation to formally recognize the practice of chiropractic in Trinidad & Tobago, which presently has only five chiropractors. The report is from a government Committee on Chiropractic chaired by Dr. Glenda Maynard, Chief Medical Officer, and follows a visit from Dr. Scott Haldeman, co-sponsored by the World Federation of Chiropractic, the American Chiropractic Association and the Canadian Chiropractic Association.

Caribbean island nations that presently have formal legislation regulating the practice of chiropractic are Barbados and the Leeward Islands (St. Kitts and Nevis). There is also legislation for US dependencies, Puerto Rico and the US Virgin Islands. Elsewhere practice is legal under the general or common law, which is the current situation in Trinidad & Tobago.

- **WFC - A Member of CIOMS.** On a vote taken in September the World Federation of Chiropractic has been accepted as a member of the Council of International Organizations of Medical Sciences, a Geneva based organization established in 1949 with funding from the WHO and UNESCO as the premier international organization for international health science federations.

Other CIOMS members include the World Medical Association, the International Council of Nurses, the World Federation of Neurology, the International Federation of Physical Medicine and Rehabilitation and the World Federation of Spine Surgeons.

In a letter of support for the WFC's application Lord Walton of Detchant, President, World Federation of Neurology, affirmed that "the relationship between the medical and chiropractic professions worldwide has become increasingly one of mutual respect and collaboration." It was Lord Walton who introduced the UK Chiropractic Act in the House of Lords in England in 1994.

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