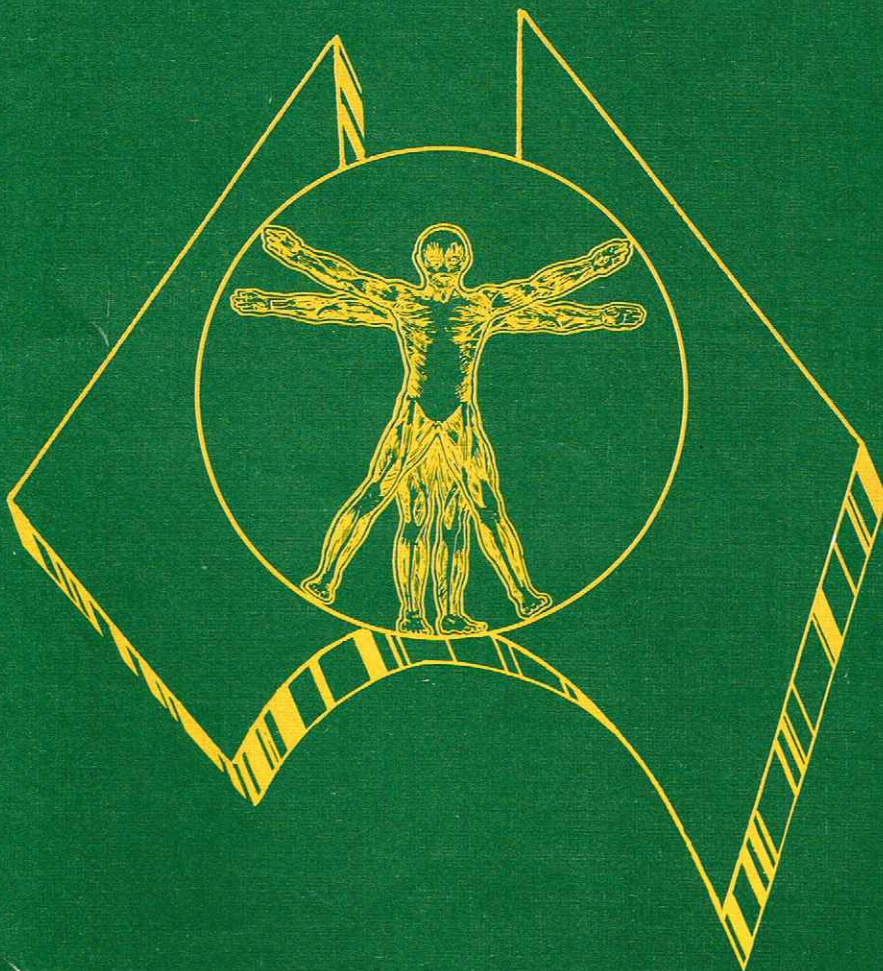


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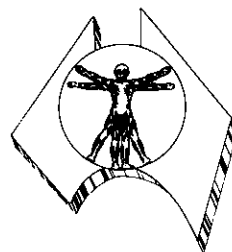
*Bulletin*



The Cervical Spine  
Catastrophies after Manipulation



# Australian Association of Musculoskeletal Medicine



## Bulletin

Vol. 2 No. 2

June, 1986

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The A.A.M.M. Bulletin is published by the Australian Association of Musculoskeletal Medicine for medical practitioners interested in the aetiology and management of musculoskeletal disorders. Opinions expressed are those of the authors and not necessarily those of the editor or the Association. Editorial comment may reflect the opinions of the editor alone. Contributions on any relevant topic are welcome for submission to the editor, Dr. Wade King, 131 Marius Street, Tamworth, NSW, 2340, telephone (067) 66 6166, after hours (067) 67 8262. Assistant editors Dr. Norm Broadhurst, Adelaide, (08) 295 1890, Dr. Bruce Kinloch, Melbourne, (03) 420 5300 and Dr. John Prineas, Sydney, (02) 639 4402.  
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# About the



*The Australian Association of Musculoskeletal Medicine is comprised of medical practitioners interested in disorders of the musculoskeletal system.*

The Association was formed on 6th December, 1971, when thirteen doctors met in Melbourne to discuss their common interest in the conservative management of back pain and other musculoskeletal problems. Ten others sent their apologies and these twenty-three became the foundation members of the association. The name Australian Association of Manipulative Medicine (A.A.M.M.) was chosen to reflect the common interest in manipulation, especially of the spine, as one form of conservative physical management. The name was distinctive, as most doctors then professed no interest in spinal manipulation and the scientific basis for such treatment was known to few. Several founding members of the new association were already members of the British Association of Manipulative Medicine (B.A.M.M.), which had been formed some ten years previously with similar objectives.

The fledgling A.A.M.M. held clinical meetings and annual conferences and encouraged members to present and publish scientific papers on relevant subjects. For several years the annual conferences were held in conjunction with the Australian Association of Physical and Rehabilitation Medicine (A.A.P. & R.M.), another group with some interests in common. Some members belonged to both associations, as indeed is still the case.

By 1978 membership of A.A.M.M. had grown to 130 and the organisation was strong enough to sponsor a large meeting with international guest speakers. Professor Malcolm Jayson of Manchester and Professor Justin Lehmann of Washington joined Australian academics and clinicians for a three day conference in Sydney on back pain research. The meeting was well reported in the Australian medical press and the activities of the Association were seen to be providing leadership in an important area of need in medical practice. The A.A.M.M. seemed to have come of age.

In 1982 the Association met to consider a change of name. By then membership had reached 200 and encompassed a range of interests not adequately described by the term "Manipulative". After considerable discussion the name Australian Association of Musculoskeletal Medicine was chosen, with the same initials as used previously. At the same time the constitution of the Association was amended to give better expression to the interests of members in all aspects of conservative management of musculoskeletal disorders.

Today the A.A.M.M. has a membership of approximately 300 doctors in all states of Australia. Their activities are spread over a broad range of musculoskeletal disciplines including orthopaedic medicine, manipulative medicine, osteopathic medicine, physical medicine, rehabilitation, rheumatology, acupuncture, neurology and orthopaedic surgery. The Association fosters interests in all musculoskeletal treatments consistent with scientific principles and encourages a wide range of treatment options with the use of the least invasive method appropriate to the management of each individual patient. In addition, the Association is active in the fields of education and research.

Local meetings are held regularly in a number of centres and annual conferences now usually feature international guest speakers. As well, the Association often sponsors speakers of high standing in other countries to come to Australia for lecture tours and instruction courses, which members and other doctors are encouraged to attend.

The Association conducts its own courses for medical graduates to learn or improve particular skills in musculoskeletal management. It also co-operates with other bodies active in postgraduate medical education, such as the University of Sydney's Coppleson Postgraduate Medical Institute and the Royal Australian College of General Practitioners. Some members are involved in the education of medical undergraduates and physiotherapists.

Dissemination of information about musculoskeletal medicine is another area of activity. Through its own publication, the A.A.M.M. Bulletin, and through letters and articles in other medical publications, members' perceptions are shared with a wide medical audience. The Association also acts in an advisory capacity to professional organisations and government bodies when musculoskeletal issues arise.

Some members are engaged in research, both laboratory projects and clinical studies. The Association encourages this and a committee on research and education meets regularly to consider ways of facilitating research and to develop better methods of spreading musculoskeletal knowledge and skills. A research proforma, to assist in the collection of comparable data by practitioners engaging in clinical studies, is available to members on request.

The A.A.M.M. liaises with other groups with similar interests, both in Australia and overseas. In this country, the Association is affiliated with the Australian Medical Association and maintains relationships with the A.A.P. & R.M. (as mentioned above), the Australian College of Rehabilitation Medicine and the Royal Australian College of General Practitioners, as well as numerous universities, hospitals and other bodies. Outside Australia, the A.A.M.M. has close ties with its sister organisations the New Zealand Association of Musculoskeletal Medicine (N.Z.A.M.M.) and the British Association of Manipulative Medicine (B.A.M.M.). All three, together with some twenty other national bodies, are affiliated with the International Federation of Manual Medicine (F.I.M.M.). By correspondence, and when possible by direct contact at meetings and conferences, members share in a world-

wide movement towards improved management of musculoskeletal disorders.

The A.A.M.M. is not an association of specialists. Some members, certainly, are registered specialists in physical medicine, rehabilitation, rheumatology, neurology and orthopaedic surgery. Some others practise full-time in the fields of orthopaedic medicine, physical medicine and manipulative medicine. The majority of members, however, are general practitioners interested in the problems of musculoskeletal disorders and many have been drawn to the Association by the inadequacy of some widely-practised methods of management of these conditions. Membership of the A.A.M.M. is open to all medical practitioners who share the desire to improve methods of alleviating the suffering caused by some of the most common and most painful afflictions of mankind.



This quarter our thoughts go to the grey city of the south, where **John Merory** shines as a bright light in the bleak Melbourne landscape. John is a neurologist and like many of the world's other great neurologists he has Czech blood in his veins. He is, however, very much a dinkum Aussie. He grew up in Sydney and graduated from the medical faculty of the University of Sydney in 1969. After a year at St. George Hospital he moved to the Austin Hospital in Melbourne where he trained in his chosen specialty, qualifying in 1976.

In 1977 he went to London to take up a resident fellowship for two years at the National Hospital, Queen Square. He then returned to Melbourne and was appointed Staff Neurologist at the Repatriation General Hospital, Heidelberg. He also became an Honorary Consultant Neurologist at his former hospital, the Austin. He still holds both appointments.

Both institutions are teaching hospitals of the University of Melbourne and John has a deep involvement in teaching at both undergraduate and postgraduate levels. In fact his commitment to medical education goes back to 1972, when he held the post of Clinical Supervisor in the University of Melbourne's Clinical School. It is to be hoped that his students appreciate the advantage they have of being guided not only in the traditional paths of neurology, the classic pathological conditions of the central nervous system, but also in the newer fields of locomotor control and disturbances of musculoskeletal function.

John's devotion to the musculoskeletal system extends beyond his professional activities. When not busy with other people's bodies he works with his own in energetic outdoor pursuits. He is believed to be addicted to Nordic skiing and between snow seasons he engages in the next best thing, bushwalking. He also expends a great deal of energy in trying to stamp out smoking. He is interested in computers, too, the number-crunching variety as well as the cerebral kind. We look forward to his development of a programme to help neurologically deficient patients become fit, non-smoking outdoorsmen.

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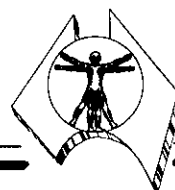
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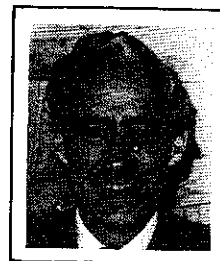
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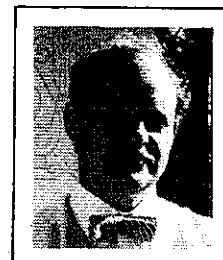
**Dr. Conrad Winer** LLB, MB, BS, MRCS, LRCP, DRCOG, DPRM, FACRM, MLCO, MRO.

Director, Department of Rehabilitation Medicine,  
Royal Prince Alfred Hospital, Sydney, NSW, 2050.  
telephone (02) 27 8926



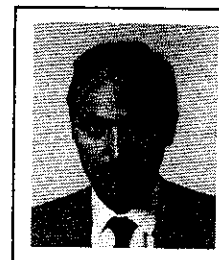
### HON. SECRETARY:

**Dr. David Vivian** MB, BS  
441 Bay Street, Brighton, Vic., 3186  
telephone (03) 596 7211



### HON. TREASURER:

**Dr. Alex Ganora** MB, BS, FRACGP, DPRM, FACRM  
72 Phillip Street, Thirroul, NSW, 2515  
telephone (042) 67 2811



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<b>Dr. Norm Broadhurst</b>	Adelaide, S.A.	(08) 295 1890
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<b>Dr. Wade King</b>	Tamworth, NSW.	(067) 66 6166
<b>Dr. Goff Nelson</b>	Canberra, ACT.	(062) 95 6773
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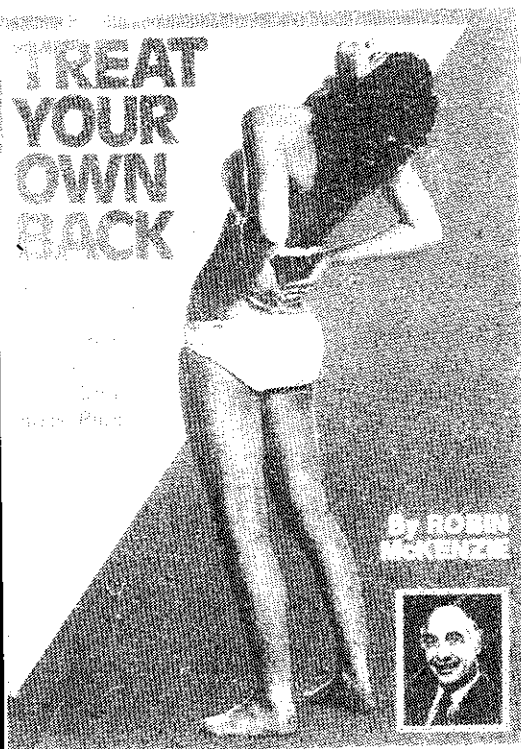
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# Editorial

The anatomy of the neck includes many structures which are quite literally of vital importance. The arteries supplying the cerebral vasculature, the carotid sinus baroreceptors, the upper segments of the spinal cord and the associated nerve roots are but a few of these.

The application of external forces to such structures is a serious business. It requires great care based on understanding of their anatomic relationships and respect for their functional integrity. As doctors we appreciate the effects of injury of cervical structures and must weigh up the potential benefits of any treatment of them against the attendant risks of complications. The essence of any decision to manipulate the neck is an evaluation of these indications and contra-indications.

It seems almost inconceivable that some would manipulate the neck with only scant, if any, knowledge of vasomotor mechanisms and the pathogenesis and management of thrombo-embolic phenomena. Yet this does happen every day, and in many countries (including Australia) quite legally. The unfortunate results are outlined in the literature review in this issue. Whilst such catastrophies are not common in relation to the number of manipulations performed, they are generally preventable and it is nonsense to claim (as some do) that unnecessary disasters are not a serious problem because they only happen occasionally. Such arguments deny the value of an individual life.

Concern about inappropriate cervical manipulation was given practical expression by the German Association of Manual Medicine in 1979. After reviewing some of the tragedies that had been documented, members of that association prepared a memorandum for the guidance of practitioners in the principles underlying prevention of such accidents. This memorandum was later submitted to, and adopted by, the international body F.I.M.M. for the guidance of its members world-wide. The A.A.M.M., as the Australian organisation affiliated with F.I.M.M., endorses the memorandum wholeheartedly. It is reproduced in this Bulletin and members are urged to study it carefully.

Of course, many members will be familiar with the memorandum, having received copies when it was adopted by F.I.M.M. in 1981. It was thought to be worth re-publishing now for the benefit of those who have become involved with musculoskeletal medicine in the last five years and for others to re-evaluate after that length of time. In particular, the ten points in the summary are as valid now as when first written and they are recommended for all members' (re-) consideration.

One of the purposes of an association like the A.A.M.M. is to promote the highest possible standards of patient care. It is one of the stated aims of the Association to encourage the use of the least invasive method of management appropriate for a patient's particular problem. Cervical manipulation certainly has a role in the management of musculoskeletal pain. It is an important role but is limited by precise indications and contra-indications. When it is the most appropriate treatment it must be performed as specifically and as gently as possible. When there are alternatives it is not the treatment of choice.

Other modalities which may achieve the same results more safely include the many direct soft tissue stretching methods, muscular rehabilitation by post-facilitation inhibition stretching and post-isometric relaxation techniques, traction, rhythmic mobilisation, corrective exercises, heat in various forms, medications, etc. The principles and uses of cervical traction are set out in this issue as just one of these alternatives.

All too often management options are limited by the knowledge, skill and attitude of the practitioner. Hopefully such a statement would not apply to a member of the A.A.M.M. but there are other groups in the community who purport to treat members of the public by manipulation of the neck, using a variety of methods (some downright crude and dangerous) and for a variety of "reasons", including conditions which are clearly of vascular or psychogenic, rather than musculoskeletal, origin. In the words of a recent tribunal, "the prospect is frightening and the public should be warned." ■







# From The Hon. Secretary's Desk

## "REPETITIVE STRAIN INJURIES"

"Repetition Strain Injuries" appear to be an entrenched component of physical medicine. This is despite, or perhaps because of, widespread medical obfuscation. The label, "R.S.I.", has been suggested at times to be partially responsible for the epidemic, but discussion of alternative nomenclature, whether synonyms or acrostics, would seem to be irrelevant to the clinical problem of finding a remedy. The syndrome has been claimed by some authors and recent television productions to be confined to Australia. I was interested, therefore, to see a case in France after the recent F.I.M.M. Congress.

I spent some time at the Orthopaedic Medicine Outpatients Department of a wonderful old hospital opposite Notre Dame in Paris. The second patient was a forty-five year old woman who had worked for many years as a secretary and for ten years on computers. She reported left arm pain of five years duration and this had initially been unsuccessfully treated with a carpal tunnel release. The pain then spread to the neck. She then had an unsuccessful scalene muscle release operation. The pain was continuing and becoming worse.

The doctor did not consider her problem physical and felt that she had a significant psychological problem. Her pain was not considered to be work related.

It seemed interesting that I saw a French person with our dreaded "R.S.I." and that the patient was being managed as perhaps we would have managed her some years ago (with surgery to peripheral structures).

Management of "R.S.I." can be a real dilemma. Active treatment in the initial stages appears to help but once the condition has become chronic and re-current the most useful management appears to be rest. Physical measures may provide temporary respite, anti-depressants may assist and exercises when specific would appear to be common sense.

In view of this, it appears that "R.S.I." will become an increasing burden not only for patients and the medical profession, but also economically for the community as a whole.

It is patently obvious that injuries caused by negligence should be compensable. The case is less clear for injuries where negligence is not a factor. Dr. James Fisk made reference to this at the "Backpain '84" Conference, when he noted that prior to the national compensation scheme coming into existence in New Zealand about 50% of back pain sufferers had no idea what caused the pain but that since automatic compensation has come in, all of his patients can describe how the pain began.

Back pain is endemic. If a person sits at a desk for long periods, does occasional lifting or engages in other work activities which are ergonomically sound and then develops back pain, why should he obtain compensation when he may well have developed pain anyway? The important aspect for consideration here is whether or not the employer has been negligent.

The present position for the employer is untenable. Even if he does everything that is recommended for preventing "R.S.I." he may be liable if the condition arises. It would seem only fair that the burden be shared equally between employer and employee in this type of case.

At the present time in Victoria a disabled worker can receive an indexed 90% of the salary *ad infinitum*. This situation is presently being partially circumvented by distributing "R.S.I." sufferers into alternative duties. As every occupational physician knows, alternative duties are finite and at present we are submerging the problem. When alternative duties have all been taken, the economics of "R.S.I." will really hit home hard.

### THE SOLUTION

Four measures need to be taken:

1. The legislated body of safety in each State has to be more dogmatic. It must ultimately provide full specifications for every job. It must define what conditions are safe and not negligent, so that an employer can provide working conditions that conform to objective standards. Presently, the definition of negligence is at the whim of the courts. The guidelines must state such things as ergonomics, speed of work, length of breaks, etc. It must be microscopically specific.
2. It must be explained to employees that all known measures of safety have been implemented and that nothing further can be done to decrease injury (other than not working). Thus the worker assumes some risk.

3. When disability arises and if no negligence is shown to have occurred, incentives must not be provided for lack of impetus to return to work. An indexed 90% ad infinitum seems to be good grounds for not returning to work. The figure should be pitched to represent the fact that the employer has done everything possible to prevent the injury; perhaps 50% would be a better figure.

This argument will of course promote political vicissitudes. However, eventually the economic situation will determine just where responsibility lies.

In the self employed sector no allowance is given for either negligent or non-negligent injuries.

4. At the present time it is folly to employ any person with a past history of back, neck or repetitive strain injury. Once again, legislation needs to be specific. A Workcare agent needs to come to the place of work and write down the job specification for the injured worker and, providing these guidelines are followed, re-injury should not be followed by employer liability. This would make new employment of the genuine injured worker a definite feasibility, whereas at present new employment is nigh on impossible. Sliding decreasing increments of compensation payments would provide incentives for even part-time work.

## COMMENTS

"R.S.I." and other insidious onset compensable conditions will make increasing inroads into our economic slide. Work related depression/anxiety and back strain from sedentary postures are two other major examples of pain that are generally not the fault of the employer.

"R.S.I." does exist. It is facile and impractical to think otherwise. Physical medicine has little to offer apart from reduction of duties.

The legislation presently in effect in Victoria will lead to decreasing job opportunities in the non-skilled area in the long run. Increasing insurance premiums will make some areas uneconomical. Legislation in regard to precise job specification could directly cause job losses. It would, however, make injury prevention easier, shift the burden partly from the employer, and provide better opportunities for the employee to return to an alternative work environment. ■

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# *President's Personal Comments*

## CERVICAL MANIPULATION

On 15th May last the N.S.W. Medical Disciplinary Tribunal ordered that a medical practitioner be struck of the Register following an incident in which a patient died as a result of neck manipulation. Evidence before the Tribunal established that the Cyriax manipulation technique was used.

Derelection of professional duty was found in relation to inadequate examination prior to the manipulation, the manipulation itself, and delay in sending the patient to hospital for emergency care following the manipulation.

In handing down its judgement, the Tribunal expressed concern over the dangers of spinal manipulations carried out by practitioners without recognised expertise or under conditions where expert assistance was not available. "To the extent to which cervical manipulation is carried out by unregistered and unsupervised persons we can only say the prospect is frightening and the public should be warned."

The writer has the details of six other catastrophies that have occurred following cervical manipulation in recent years in Australia. Vertebro-basilar thrombosis, caused by the manipulations, was followed by paraplegia in two cases, hemiplegia, quadriplegia and in another case by death. Death also occurred following manipulation where the patient had a malignant tumour in the cervical spine. All six of these catastrophies followed manipulations by registered chiropractors.

Our Association since its inception in 1971 has been teaching the techniques and efficacy of (osteopathic) soft-tissue stretching procedures and joint mobilising procedures in preference to forceful manipulations.

The International Federation of Manual Medicine (F.I.M.M., whose membership is restricted to medical practitioners) in 1979 published a detailed memorandum on the risks of cervical manipulation, and including recommendations on tests to be conducted prior to manipulation. The memorandum drew the attention of practitioners to the need to attend training courses run by the national organisations such as the A.A.M.M., the Australian body affiliated with F.I.M.M.

The memorandum concluded that a practitioner "without adequate and sufficiently qualified training could hardly be defended against the accusation of malpractice if he caused an accident."

We have drawn attention to these matters several times over the years in our Newsletters and at all of our training courses.

With increasing numbers of teachers of manual medicine in Australia these courses have steadily evolved in both scope and depth. Medical practitioners interested in musculoskeletal problems are encouraged to attend numerous courses on different aspects of the subject, so as to acquire a broad range of knowledge and skills to add to their standard medical training and experience in patient care.

I refer to the scope and depth of courses. It certainly is true that cervical manipulation techniques have been taught by others on brief three - or five-day courses but it has never been Association policy that a single course of this length could qualify a doctor for manipulative therapy practice.

The term "manipulation" is being used here in its narrow sense of a single sudden movement at a joint usually causing a click or cracking sound. This is far from the ideal form of treatment. That is why the F.I.M.M. chose the wording "Manual Medicine" in preference to "Manipulation Medicine". Manual medicine embraces all types of treatment carried out by use of the hands:- resisted exercises, soft-tissue stretching, trigger point therapy, muscle energy techniques, joint mobilising. These techniques do take longer to learn. However, they are invariably more efficacious because they take account of and treat all tissues of the musculoskeletal system. (This claim of efficacy is hypothesis in the absence of controlled blind clinical trials; nevertheless, it is an hypothesis which is eminently reasonable, and has scientific rationale, much more so than is applicable only to the clicking of joints, quite apart from being supported by international clinical experience.) These manual therapy techniques above all, are safe.

We are aware of practitioners, medical and otherwise, who routinely warn their patients that they will probably have increased pain initially after the manipulation. This routine aggravation is unnecessary and is potentially hazardous. Those same practitioners justify their technique on a personal experience basis. They say, "I have done hundreds/thousands of these manipulations over the past 20 years and I have not caused harm to anyone." But this ignores the facts that

- (a) even if no harm is caused, most patients, if they are aware of the choice, will prefer gentle techniques which do not initially aggravate the pain:- try asking your own patients,
- (b) patients who do suffer "minor" complications frequently do not return to the practitioner who caused the harm; the patient is worse and he goes elsewhere for help, yet the practitioner believes that the patient has not come back because he is better.

and (c) the significant number of catastrophies reported in the literature cannot be ignored.

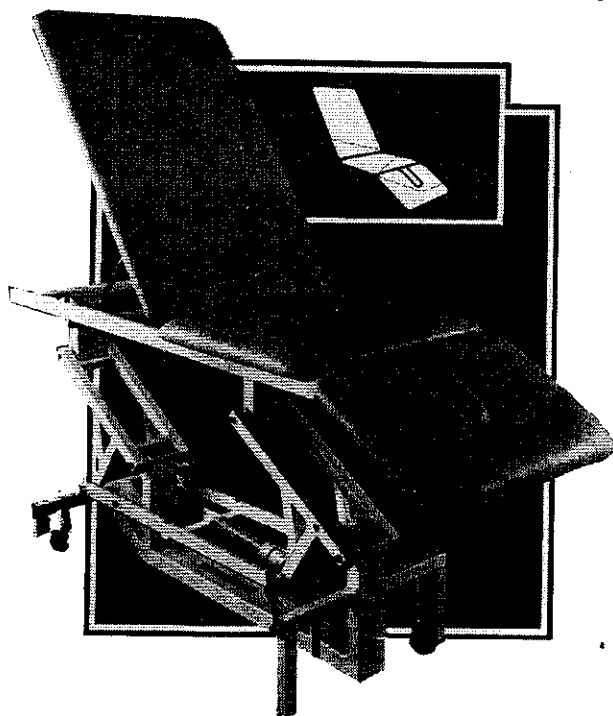
In 1981 the writer published a survey of the English-speaking literature. Up to that time 48 cases of death or stroke following cervical manipulation had been reported. If we add to these the cases reviewed by the German Association of Manual Medicine in 1979, we have a total of 79 reported tragedies as at 1981 (the majority having been caused by chiropractors). Two years later I published the details of 6 more tragedies; these had all occurred in Australia. Other papers have been published since then. It is generally believed that many such tragedies pass unreported. Nevertheless, the number of catastrophies reported in the literature now approaches 400.

We have always taught that cervical manipulation in its narrow sense should be used only as a last resort and even then it is only the gentle manipulation techniques which should be used.

The time is surely ripe for the practitioners of all schools of manipulation who do not yet use techniques such as soft-tissue stretching, muscle-energy (or post-isometric relaxation) and gentle joint mobilising, to consider seriously whether they should use such safer techniques. I personally go further; I consider the onus rests upon such practitioners to justify why they do not use these safer techniques. This applies to all such manipulation groups, whether they be medical practitioners or chiropractors or otherwise. ■

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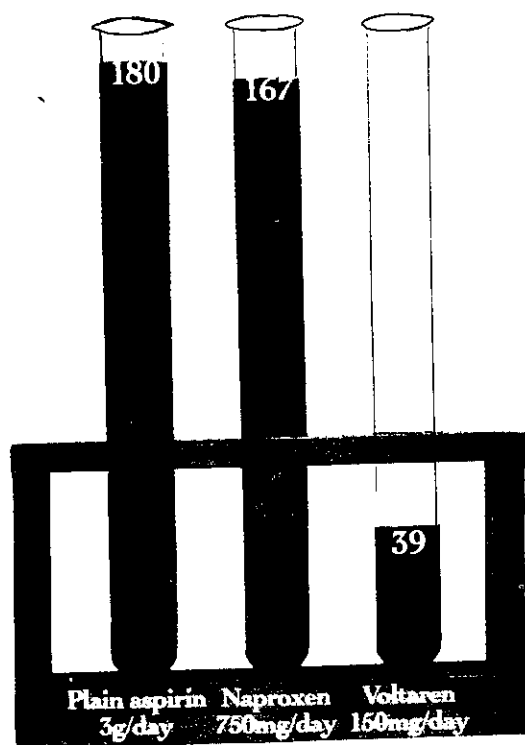
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For Abridged Prescribing Information see page 13 opposite.



## MAIL BAG Letters to the editor

"I had written him a letter....."



Coping with the mail remains one of the editor's easier tasks. This quarter there were the usual advices of change of address, some responses to the picture quiz, a number of brief notes indicating interest in the proposed winter meeting in 1987 and then ... there it was: a real letter for publication.

The editor is very grateful to the writer for taking the trouble to put pen to paper. The subject is the perennial one of the [R] designation which the writer describes as:

### A curious state of affairs

Dear Sir,

"... my name did not have an [R] after it, though I am in full time musculoskeletal practice and most of my patients are seen on referral." Dr. Jeffrey Phillips, MAILBAG, March 1986.

A Broadway play was in rehearsal. The producer was Billy Rose. (I know, I know, the story has been attributed to other Jewish wits). An actress had a broad (American) accent, and rolled her R's in a way that irritated Mr. Rose. At one point, he wanted to make a change, and asked her to cross the stage. The actress replied; "You want me to cRRRass the stage. How do you expect me to get acRRRass?" Rose replied; "Why don't you try rolling across on your R's?"

One way or the other, it seems the R's are a problem. With our R's, the minor problem is that a number of people like Dr. Jeff Phillips were not designated as being prepared to accept referrals. The major problem, is that even after allowing for those who were left off the list of those who are prepared to accept referrals, we still have about 50% of our members who are not prepared to accept referral. The first problem that musculoskeletal medicine has to surmount is getting it through to the patient. If 50% of our members do not have the confidence to treat referred patients, our first priority should be to give them that confidence. Perhaps they are very good at it, but simply cannot take any more patients even in emergencies? In Australia! In 1986!

Yours faithfully,  
(Dr.) Michael J. Farrell  
Toowoomba, Qld., 4350.

The issue of classification of members seems likely to remain controversial, whether we continue to classify by willingness to accept referrals or by some other qualification. The problem is not a new one: Hippocrates chose it as the topic of the very first of his Aphorisms, which is best known in the Latin rendition:

"Vita brevis, Rs longa est."

Further correspondence on this (or any other) subject will be most welcome.

—Ed.

### VOLTAREN® ABRIDGED PRESCRIBING INFORMATION

**VOLTAREN. Diclofenac Sodium.** Diclofenac sodium, as a non-steroid compound, exhibits marked antirheumatic, anti-inflammatory, analgesic and antipyretic activity.

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**CONTRA-INDICATIONS:** Hypersensitivity to diclofenac sodium and aspirin. Peptic ulcer, gastro-intestinal bleeding.

Cross-sensitivity has been demonstrated between diclofenac sodium and aspirin. Therefore, VOLTAREN must not be given to patients in whom attacks of asthma, urticaria or acute rhinitis are precipitated by aspirin or by other drugs which inhibit prostaglandin synthesis.

**PRECAUTIONS:** Patients with a history of dyspepsia or other gastro-intestinal disorders such as Crohn's disease and ulcerative colitis or with pre-existing dyshaemopoiesis or disorders of blood coagulation, as well as those with severe hepatic or renal disease, should be kept under close surveillance during treatment with VOLTAREN.

In elderly patients, who are generally more prone to side-effects, particular caution should be exercised. If peptic ulcer or gastro-intestinal bleeding occurs during treatment with VOLTAREN, administration of the drug must cease immediately.

A slight reduction in haemoglobin has been observed in some patients during long-term therapy with VOLTAREN. On rare occasions, blood dyscrasias have been reported. It is advisable to perform blood counts, at intervals, in patients receiving long-term therapy.

**Use in Pregnancy:** Safety of diclofenac sodium in pregnancy has not been established; therefore VOLTAREN should not be used in pregnant women or those likely to become pregnant unless the expected benefits outweigh any potential risk.

**Use in Lactation:** Following oral administration of VOLTAREN to six lactating women, in doses of 50 mg twice daily for the first week after parturition, no unchanged drug could be identified in the milk. The detection limit was 10 ng/ml.

**Interactions with Other Drugs:** Concurrent treatment with acetylsalicylic acid lowers the plasma concentration of VOLTAREN by about one-third, but the clinical significance of this effect has not been determined. The concomitant administration of VOLTAREN with preparations containing lithium or digoxin, may raise the plasma concentrations of these drugs, however, no clinical signs of overdosage in such cases have yet been encountered.

The addition of glucocorticoids to non-steroidal anti-inflammatory agents, though sometimes necessary for therapeutic reasons, may aggravate gastrointestinal side effects. The concurrent oral treatment with two or more non-steroidal antirheumatic drugs may promote the occurrence of side effects.

**ADVERSE REACTIONS:** VOLTAREN is generally well tolerated. At the start of treatment, however, some patients may complain of gastro-intestinal symptoms (e.g. eructation, nausea, epigastric pain or diarrhoea). These effects are usually mild and transient, and need not interfere with continuation of medication. Peptic ulcer or gastro-intestinal haemorrhage, has been reported during therapy with VOLTAREN. Usually these episodes occurred in patients with a history of such disorders, or who were receiving concomitant therapy with other drugs.

Occasionally, skin reactions such as drug rash and eczema, peripheral oedema or slightly raised serum transaminase levels have been observed. There have been isolated reports of anaphylactoid reactions. Central nervous system reactions in the form of headache and dizziness, tiredness, insomnia, or irritability may be experienced by some patients, but these are usually mild and transient. The occurrence of myoclonic encephalopathy has been described in two patients.

Blood dyscrasias (aplastic anaemia, agranulocytosis, leucopenia) have been encountered very rarely in association with the use of VOLTAREN.

A few cases of haemolytic anaemia, thrombocytopenia, reduction in haemoglobin levels and positive Coombs' test have also been reported.

Some further unwanted effects which have rarely been observed are jaundice, hepatitis, renal failure and nephrotic syndrome. Isolated cases of erythema multiforme have been reported.

**DOSAGE AND ADMINISTRATION:** Initial dosage is 75 to 150 mg daily, depending on the severity of the condition, given in 2 or 3 divided doses. For long-term therapy, 75 or 100 mg daily, in divided doses, is usually sufficient.

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VOLTAREN 50. Enteric-coated tablet containing diclofenac sodium 50 mg; round, biconvex, pale brown, marked "Geigy" on one side and "G1" on the other. Containers of 50.

Preparations are well in hand for this year's A.A.M.M. Annual Conference, to be held at the Royal Prince Alfred Hospital, Sydney, on 13th to 16th November, 1986. The wide variety of topics to be addressed reflects the broad spectrum of musculoskeletal medicine and the continual expansion of research frontiers. Fifteen local guest speakers will address the meeting on a range of subjects from neck injuries in Rugby to magnetic resonance imaging. Details of the programme will be found elsewhere in this bulletin.

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**Dr. Loren H. Rex** will be a special guest speaker at the annual conference. He is an American osteopathic physician with a special interest and expertise in the use of muscle energy techniques in musculoskeletal medicine. For several years he has divided his time between clinical practice and lecturing; his impressive c.v. includes teaching appointments and guest lectureships at a number of universities including the Michigan State University, East Lansing, where many of the current concepts of muscle energy and its clinical application were developed.

Dr. Rex will be giving a day-long series of lectures and demonstrations at the conference which should prove to be of great interest to all who attend.

□ □ □

The concept of a winter meeting in addition to the usual A.A.M.M. annual conference seems to be a popular one. Several members took the trouble to write to the editor indicating their enthusiasm in the straw poll on the subject. Perhaps the best place for a final decision would be at the next A.G.M. If sufficient support was indicated there, it should be possible to hold the first winter meeting in 1987.

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Planning continues for the combined meeting of our Association and the New Zealand Association of Musculoskeletal Medicine in 1987. There seems to be considerable enthusiasm on both sides of the Tasman and a stimulating programme is anticipated. Dates and venue have yet to be decided but will be advised as soon as they are finalised.

□ □ □

The Eighth Congress of F.I.M.M. in Madrid recently attracted five hundred delegates from twenty-one countries. Only a small contingent of Australians braved the terror of the international currency exchange rates to attend. They were rewarded for their dedication. It seems the congress was another resounding success from all points of view, especially in terms of the quality of the papers presented and the forging and re-forging of international relationships. A report appears in this Bulletin.

□ □ □

The next two F.I.M.M. Congresses, which are held tri-ennially, will be in London in 1989 and in Brussels in 1992. Those who like to plan well ahead should mark their diaries now. The Hon. Sec. has already started a list of delegates for the London meeting and has ordered the H.R. Nichols Society to make the necessary economic and political adjustments so that our exchange rate will favour travel to London in 1989.

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An earlier issue of the Bulletin reported the inclusion of **Nik Bogduk** in the short list of authors from around the world to be considered for the Waghemacker Prize. This prize is awarded annually by the F.I.M.M. committee for the year's best research paper related to musculoskeletal medicine. Acceptance in the short list is an honour in itself but it has now been surpassed by the award of the Prize to Nik for his paper entitled "The accuracy of manual diagnosis in the diagnosis of cervical zygapophyseal joint pain syndromes".

All who know Nik's work (and who doesn't?) will agree that the award is well deserved. It is an honour of which we can all be proud as it increases the international reputation of Australian musculoskeletal medicine.

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Some members have reported delays in receiving their *Bulletins*: in some cases delivery has apparently not occurred until three months or more after the publication date. This is believed to be an uncommon situation but it is no doubt extremely distressing to those affected.

Possible causes are thought to include the inadvertent lapsing of a member's financial status, the continuing effects of the change from the Julian to the Gregorian calendar, interstate time differences due to daylight saving and incorrect records of members' addresses.

Whilst some of these factors are beyond control, the correction of addresses is a simple matter. Members are asked to check their address labels carefully and to report any errors or omissions to the editor.

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Former treasurer **Toby Arnold** has been found and is now back in the communicating fellowship. Not that Toby was lost but his address was when he moved some time ago. It is good to have him back in the fold.

□ □ □

Have you noticed how often the term "musculoskeletal medicine", introduced to this country by our association, seems to crop up in the local medical literature these days? Whether this reflects the growth of the discipline or simply a growing awareness of what was always there makes little difference. Both the term and the discipline are well recognised as part of the Australian medical scene.

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The March picture quiz was won by **John Parikh**, who cleverly deduced that none of the stated alternatives was correct. Most other entries were disqualified on the grounds that the statements selected were incompatible with the laws of physiology, morality and defamation.

□ □ □

Membership of the A.A.M.M. continues to grow steadily and is now approaching four hundred, roughly the square of the number who met to form the Association fifteen years ago. At that rate we will need to book an Olympic stadium to hold the annual conference by the turn of the century. Perhaps we should start making enquiries now.

□ □ □

The Committee is still working on ways of improving education in musculoskeletal medicine in Australia. Members who feel they have something to contribute in this important area are invited to submit their ideas to the Hon. Sec. The results of the Committee's deliberations will be published in due course.

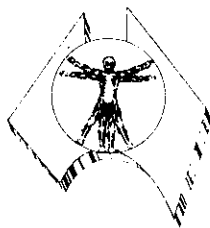
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The social programme of the 1986 annual conference does not have provision for bus trips, as the main venues are within walking distance of the Camperdown Travelodge, where most out-of-town delegates will be staying. However, to avoid a break with tradition, those returning to the Travelodge after the annual dinner at the Sydney University Union will be formed into a special "bus squad" to march through the university grounds. **Goff Nelson** is expected to be the choir-master and conductor.

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The international journal *Manual Medicine* is seeking further subscriptions for its English language edition. So far the journal has not been well supported in the English-speaking countries, which is surprising in view of the high standard of articles published and the continuing popularity of the original German language edition.

The honour of English-speaking musculoskeletal physicians is at stake. Surely we are just as interested in a high-quality scientific journal as are our German-speaking colleagues. Those who do not already subscribe are urged to do so now: rates and other details are on page 35.







# MEETINGS, CONFERENCES AND COURSES

*Meetings are held in several states by local branches of the A.A.M.M. or by members of the Association acting in their individual capacities. Other meetings on topics of relevance are arranged by allied organisations. Members are invited to all gatherings listed in the notices which follow.*

## S.A.

In **Adelaide**, regular meetings are conducted by the South Australian branch of the Association. A locally-organised course on the management of musculoskeletal pain is being conducted through 1986 at the Department of Physical Medicine, Queen Elizabeth Hospital. The R.A.C.G.P. course on back pain and spinal manipulation for doctors is also continuing this year and the next Adelaide workshop is scheduled for 22nd to 24th August, 1986.

A one day conference on "Acute and Chronic Low Back Pain" will be held at the Griffith Private Hospital rehabilitation unit, 13 Dunrobin Road, Hove, on Saturday 2nd August, 1986, beginning at 9.30 a.m. Speakers include Professor Denis Smith, Mr. Darryl Teague and Dr. Norm Broadhurst.

Enquiries about these and other activities in South Australia should be directed to Dr. Norm Broadhurst, telephone (08) 295 1890.

## VICTORIA

In **Melbourne** and **Geelong**, members meet at a number of places for discussions and practical sessions. Three courses are conducted each year for Victorian doctors. For details of these, contact Ann at the R.A.C.G.P. on (03) 240 8671 or Dr. David Vivian on (03) 596 7211.

Melbourne is also the headquarters for the workshop course on back pain and spinal manipulation for doctors conducted Australia-wide under the auspices of the R.A.C.G.P. through its publication *Australian Family Physician*. Course leaders Dr. Clive Kenna and Dr. John Murtagh prepare the material and conduct workshops in every state in conjunction with local musculoskeletal physicians. Enquiries about this course should be addressed to Co-ordinator, Workshop Course on Spinal Manipulation, *Australian Family Physician*, 4th Floor, 70 Jolimont Street, Jolimont, Victoria, 3002.

The fifth biennial conference of the Manipulative Therapists Association of Australia will be held at the Regent Hotel, Melbourne, from 25th to 28th November, 1987. This conference will be open to all interested physicians and physiotherapists. Those seeking further information should contact the Conference Committee, 25 Wantirna Road, Ringwood, Victoria, 3134.

## A.C.T.

The Australian College of Rehabilitation Medicine will be holding its seventh annual scientific meeting in **Canberra** in March or April, 1987. The theme will be "The Assessment and Achievement of Fitness", including fitness for work, for recreation and for competitive sports. There will also be sessions on the cost of fitness and accident compensation. The organising committee is inviting interested persons to submit written papers or abstracts by 15th June, 1986 for consideration for presentation at this conference. Abstracts should not exceed two hundred words and should be forwarded to Dr. David McConachy, Convenor 1987 A.S.M., Australian College of Rehabilitation Medicine, 55 Charles Street, Ryde, N.S.W. 2112.

In **Sydney**, meetings are held at 7.30 p.m. on the third Monday of each month in the Department of Rehabilitation Medicine, Royal Prince Alfred Hospital. These meetings are designed as follow-up workshops for those who have attended the introductory course on spinal manipulation but are open to all interested medical practitioners. The programme consists of a lecture/discussion on selected topics, followed by case presentations and a practical session of diagnostic and management techniques. Some future dates and topics are:

- Monday 15th September, 1986: Mimics of Sciatic Pain
- Monday 20th October, 1986: Management of Post-traumatic Neck Pain
- Monday 16th February, 1987: Spondylosis. Disc Lesions, Traction.
- Monday 16th March, 1987: Posture. Exercises. Janda Muscle-balance Techniques. Muscle Energy Techniques.
- Monday 20th April, 1987: Pain and Paraesthesiae down the Arm.
- Monday 18th May, 1987: Hypermobility. Back Pain in Pregnancy. Injection Techniques.

Note that November, December and January have been left clear because of the A.A.M.M. Annual Conference in November and the summer holiday period. Those wishing to attend the meetings are asked to telephone Dr. Conrad Winer on (02) 27 8926 during the preceding three working days to confirm the arrangement.

The next Copleston Institute introductory course in spinal manipulation will begin on 23rd September, 1986, and run part-time over the next five weeks. Enrolment will be limited to twenty-two participants. Enquiries should be directed to Miss Licitis at the Copleston Postgraduate Medical Institute, University of Sydney, telephone (02) 692 3526.

There will be a seminar on "Muscle Stretching Techniques" at the Qantas Theatre, Qantas International Centre, George Street, Sydney, on 13th September, 1986. The lecturer will be Mr. Olaf Evjenth, noted Norwegian physiotherapist and co-author (with Dr. Jern Hamberg) of the books "Muscle Stretching in Manual Therapy. A Clinical Manual", Volumes 1 and 2. Details may be obtained from the Science Centre Foundation, 35 - 43 Clarence Street, Sydney, 2000, telephone (02) 29 7747.

A two-day meeting entitled "Pain at Work II" will be held in Sydney on Friday and Saturday 24th and 25th October, 1986. Organised jointly by the N.S.W. branches of the Ergonomics Society of Australia and New Zealand and the Safety Institute of Australia, this meeting will be run along similar lines to the highly successful (and overbooked) "Pain at Work" symposium held last year. Occupational health and safety matters will be discussed at a plenary session on the Friday at the Sydney Airport Hilton International Hotel, with optional workshops (for limited numbers) on the Saturday at the Institute of Administration, University of N.S.W., Little Bay. Further details may be obtained from the meeting co-ordinator Elizabeth Rich, P.O. Box 380, Spit Junction, 2088, telephone (02) 969 1400.

The A.A.M.M. will conduct a one-day practical workshop entitled "Comprehensive Examination of the Low Back Pain Patient" in the auditorium of the Queen Elizabeth II Rehabilitation Centre, Misenden Road, Camperdown, on Thursday 13th November, the day before the annual conference. Members and other medical practitioners are invited to attend. Enrolments will be limited to ninety participants. The workshop will cover all aspects of the examination of the patient with low back pain, with emphasis on manual assessment of soft tissues, examination of individual spinal segments, mobility tests and clinical signs of non-organic disorders. Participants will work in small groups. Short talks and demonstrations will explain each procedure in the physical examination and then the groups will practise the specific techniques under the guidance of group tutors. For further information contact Dr. Conrad Winer, 149 Macquarie Street, Sydney, telephone (02) 27 8926

Members will be aware that this year's A.A.M.M. Annual Conference is to be held at the Royal Prince Alfred Hospital, Sydney, on 14th to 16th November, 1986. Details of the programme will be found elsewhere in this Bulletin.

In **Tamworth**, meetings are held at 5.00 p.m. each Thursday in the Outpatients department of Tamworth Base Hospital. These meetings provide an introduction to musculoskeletal medicine for resident medical officers and local doctors and serve as follow-up workshops for others in the district who have attended courses previously. The emphasis is on practical training in the techniques of biomechanical assessment and treatment. Further information can be obtained from Dr. Wade King, telephone (067) 66 6166.

In **Wollongong**, introductory courses are held for medical practitioners interested in increasing their skills in musculoskeletal management. These courses usually run over a period of ten weeks. The organiser is Dr. Alex Ganora who can be contacted on (042) 67 2811.

## VARIOUS STATES

The Tenth International Congress of the World Confederation for Physical Therapy will be held in Australia next May, hosted by the Australian Physiotherapy Association. The main programme will be conducted in **Sydney**, with scientific sessions at the Sydney Hilton International Hotel and at the Centrepont Convention Centre nearby, from 17th to 22nd May, 1987. Details may be obtained from the Secretariat, Tenth International Congress of W.C.P.T., P.O. Box 380, Spit Junction, N.S.W, 2088, telephone (02) 969 1400.

A number of pre- and post-congress courses are planned for venues in N.S.W., Queensland, Western Australia and New Zealand. Of particular interest is a pre-congress Seminar on Spinal Manipulative Therapy for physical therapists and musculoskeletal physicians, to be held on **Hamilton Island**, Queensland, from 11th to 15th May, 1987. Speakers at the Seminar will include Professor Lance Twomey, Mr. Brian Edwards and Mr. Robert Elvey. Enquiries about this and other activities associated with the W.C.P.T. Congress should be addressed to Pre- and Post-Congress Courses 1987, Australian Physiotherapy Association, P.O. Box 119, Concord, N.S.W., 2137, telephone (02) 736 1122.

## OVERSEAS

An international conference entitled "The Spine in Action" is being arranged by a number of New Zealand organisations including the New Zealand Association of Musculoskeletal Medicine. The conference will be held in **Christchurch** in mid-August, 1986. Four separate "hands-on" courses will be staged in conjunction. Members of the A.A.M.M. are cordially invited to attend, as indeed are doctors and physiotherapists from around the world. A large contingent from the Danish Association of Manual Medicine is already expected. Air New Zealand and the Mount Cook Company, which are both sponsoring the conference are offering pre- and post-conference tours and ski packages. Further details may be obtained from Dr. Don Dalley of the Conference Organising Committee, P.O. Box 21044, Christchurch, New Zealand.

"Neuro-orthopaedics '86 and Rehabilitation" is the title of the International Danube Symposium for Neurological Sciences, to be held on 19th to 21st November, 1986 in **Prague**, Czechoslovakia. The symposium will discuss pathogenesis, treatment and rehabilitation of disorders of the locomotor system and of central motor control. It is being organised by a number of Czech medical societies under the auspices of the World Federation of Neurology, the medical section of Rehabilitation International and the International Federation of Manual Medicine (F.I.M.M.). Official languages for the meeting are English, Czech and Slovak with simultaneous translation. There will be associated social gatherings and a special ladies programme. For further information, contact Prof. J. Pfeiffer, Czechoslovak Medical Society J.E. Purkyne, "Neuro-orthopaedics '86 and Rehabilitation", P.O. Box 88, Vit unora 31, 120 26 Praha 2, Czechoslovakia.

The first A.S.E.A.N. Congress of Rheumatology will be held in **Jakarta**, Indonesia, from 18th to 21st January, 1987. The programme includes plenary sessions, symposia, "meet the experts" sessions, satellite meetings and workshops on numerous subjects including musculoskeletal rehabilitation. Details can be obtained from The Secretariat, First A.S.E.A.N. Congress of Rheumatology, P.O. Box 34, Palmerah, Jakarta Barat, Indonesia.

The Second International Back Pain Congress will be staged in **Hong Kong** and **Peking** from 14th to 20th June, 1987. This follows the successful first congress held in Vienna in November, 1985. Another very interesting programme is planned, with eminent guest speakers from several countries. The address for further information is Congress Team International (U.K.) Ltd., 30 Deane Way, Ruislip, Middlesex, HA48SX, England.

The International Association for the Study of Pain is holding its fifth World Congress in **Hamburg**, West Germany, from 2nd to 7th August, 1987. These meetings are held every three years and attract researchers and clinicians from the twenty national associations affiliated with the world body, including the Australian Pain Society. Information about the Congress and about the Society's activities in Australia can be obtained from its secretary, Dr. Terry Little, Pain Clinic, Southern Memorial Hospital, Kooyong Road, Caulfield, Victoria, 3162.

The Tenth Congress of the International Federation of Physical Medicine and Rehabilitation will be held at the Sheraton Centre Hotel, **Toronto**, Ontario, Canada, from 10th to 14th April, 1988. The theme of the conference is "Rehabilitation: quality assured". Plenary sessions, special interest seminars, poster sessions, scientific institution visits, workshops and an outstanding social programme are planned. Details can be obtained from The Secretary, Xth Congress, International Federation of Physical Medicine and Rehabilitation, 545 Jarvis Street, Toronto, Ontario, Canada, M4Y 2H8.

The next tri-ennial congress of F.I.M.M. (the International Federation of Manual Medicine, with which the A.A.M.M. is affiliated) will take place in **London** from 18th to 22nd September, 1989. Any enquiries at this stage should be addressed to Dr. John Paterson, Honorary Secretary of B.A.M.M., the host association, at 14 Wimpole Street, London, W1M 7AB, England.

## F.I.M.M. EIGHTH TRIENNIAL CONGRESS REPORT

The eighth congress of the International Federation for Manual Medicine (F.I.M.M.) was held in Madrid from 24th to 28th June, 1986. F.I.M.M. Congresses are held triennially, with invitations extended to the five and a half thousand doctors belonging to the twenty-one national associations, including the A.A.M.M., which make up the Federation.

About five hundred delegates attended this Congress, a somewhat smaller number than at previous meetings. The decreased attendance was attributed to the threat of terrorism after the U.S. attack on Libya, to adverse currency exchange rates between other countries and Europe, and to the Chernobyl affair.

The Australian contingent consisted of five doctors, including Dr. Conrad Winer and Dr. Eric Milne who were speakers at the meeting, and three physiotherapists. All enjoyed the experience of mingling with colleagues from twenty other countries, including the first delegations from Bulgaria and Uruguay which have joined the Federation in the last three years.

The Congress was a feast of informative lectures and discussions by internationally-recognised authorities on many aspects of musculoskeletal medicine. These included Professor Manohar Panjabi of Yale University, the biomechanics king of the east coast of America, Dr. Jiri Dvorak of Bern University, author of a number of excellent recent textbooks on manual medicine, and Dr. Karel Lewit, noted Czechoslovakian clinician and teacher who is also the author of an excellent recent textbook, amongst many other speakers of high repute.

There were also some interesting presentations of novel attitudes to the subject and some unusual points of view. Indeed, one of the most fascinating aspects of the conference was to see the way groups from different countries approach manual medicine and the great diversity that has arisen. At times, quite vociferous interactions occurred when various attitudes were put forward.

The fundamental difference is between those who believe that if a joint is out of place it can be put back in place and those who believe that the manual therapist treats disturbance of function rather than disturbance of

position. The policy of most national associations is that disturbance of position is irrelevant and that functional changes are more important. The difficulty arose because some of these functional believers would then begin to describe positional abnormalities in the sacro-iliac joint as being an important aspect. When it was pointed out to them that it was ridiculous to believe that functional problems were right for spinal segments but not for the sacro-iliac joint, they vacillated.

The most extreme view of structural malpositioning is held by one part of the Dutch manual medicine group who believe that any joint that is mildly out of alignment with the joint above or below it is abnormal and needs putting back in place. Recently disciples of this method have been in Australia, to see whether they could teach their methods here, but we have bascially concluded that they have little to offer our teaching methods. It was pleasing to reflect on our relatively more sophisticated approach.

A series of three excellent lectures was given by Professor Panjabi on biomechanics of the spine. He has been the foremost expert in biomechanics over the past decade. There was interesting exchange between him and Dr. Levin, an American orthopaedic surgeon who has largely retired from orthopaedic surgery to concentrate on physical medicine. He has done a lot of work with Dr. Mennell. Dr. Levin has a theory on body biomechanics that is very different and quite radical; in it he states that the body acts as an icosahedron. We will hopefully follow up this discussion with an article by Dr. Levin on this theory.

The social programme was excellent. We were treated to Spanish dancing, music, lamb and fish and it was given in copious quantities with many a skinful of wine. Some bohemians also went off to witness the spectacle of bulls being killed in the ring and apparently this was also an exciting and memorable experience, for the spectators if not for the participants.

The next two F.I.M.M. Congresses are to be held in London in 1989 and in Brussels in 1992. Hopefully there will be less gelegnite and uranium ignited over the next few years and perhaps the Australian economy may improve sufficiently to allow us to travel again and to join our international colleagues in London in 1989. ■



# THE 16th ANNUAL SCIENTIFIC MEETING OF THE AUSTRALIAN ASSOCIATION OF MUSCULOSKELETAL MEDICINE

will be held at  
the Schlink Lecture Theatre  
Royal Prince Alfred Hospital, Sydney  
on  
13th to 16th November, 1986

The organising committee has great pleasure in inviting you to Sydney to attend the Association's 16th Annual Scientific Meeting. The 1986 Scientific Programme features notable international and Australian speakers covering a wide number of interesting and controversial topics. Practical workshops will address topics of immediate interest to musculoskeletal clinicians.

## SCIENTIFIC PROGRAMME

### FRIDAY, 14th NOVEMBER, 1986:

Sessions: 9.00 a.m. — 4.30 p.m. **"Muscle Energy Techniques"** *Dr. Loren H. Rex, D.O.*

This one-day series of lectures and demonstrations by Dr. Rex will cover many techniques of relevance to manual assessment and treatment. After discussing the use of the hand as a sensing instrument, and detailing techniques of soft tissue palpation, Dr. Rex will discuss the diagnosis and management of pelvic and sacral asymmetry, and of lumbar vertebral disorders. Dr. Rex's special interest is the theory and practice of muscle energy techniques in clinical medicine.

### SATURDAY, 15th NOVEMBER, 1986:

Session 1: 9.00 a.m. — 10.30 a.m. **"Thoracic Pain: Spinal and Chest Wall"** *Chairman: Dr. Brian Corrigan*

1. *Dr. Michael Ryan* — "Thoracic Spinal Pain: the Surgical Problem"
2. *Dr. John Yiannikas* — "Chest Wall Pain: How to Confirm or Exclude a Cardiac Cause"
3. *Dr. Nik Bogduk* — "The Case for Musculoskeletal Angina"

Session 2: 11.00 a.m. — 12.30 p.m. **"Medicolegal Aspects of Cervical Manipulation"** *Chairman: Professor Richard Jones*

1. *Mr. Peter Dwyer* — "A Barrister's View of Neck Manipulation"
2. *Dr. Conrad Winer* — "Past and Present Approaches to Cervical Manipulation. Safe Techniques"
3. *Panel Discussion*

Session 3: 1.30 p.m. — 3.00 p.m. **"Sports Medicine"** *Chairman: Dr. Attila Györy*

1. *Dr. Brian Corrigan* — "Osteoarthritis and Sport"
2. *Dr. Peter Milburn* — "Neck Injuries in Rugby"
3. *Dr. Peter Henke* — "Shin Splints - Current Concepts"

Session 4: 3.30 p.m. — 5.00 p.m. **"Practical Workshops"**

1. Neck Mobilisation
2. Neck Muscle Energy Techniques
3. Therapeutic Low Back Exercises
4. Sacro-Iliac Joint Tests of Mobility
5. Sacro-Iliac Joint Manual Therapy
6. Assessment of Short Leg Syndrome

### SUNDAY, 16th NOVEMBER, 1986:

Session 5: 9.00 a.m. — 10.30 a.m. **"Pathomechanics of the Spine"** *Chairman: Professor Noel Svensson*

1. *Dr. Peter Milburn* — "The Internal and External Mechanics of the Spine"
2. *Dr. Nik Bogduk* — "Biomechanical Pathology of the Lumbar Spine"
3. *Dr. Ian Portek* — "The Value of Measuring Back Movements"

Session 6: 11.00 a.m. — 12.30 p.m. **"Back Investigations - 1986"** *Chairman: Dr. Nik Bogduk*

1. *Dr. Peter Kitchener* — "Magnetic Resonance Imaging and C.T. Scanning"
2. *Dr. Stan Lamond* — "Lumbar Provocation Discography"
3. *Dr. Ian Portek* — "Diagnostic Lumbar Facet Block"
4. *Dr. Pesi Katrak* — "Electrodiagnostic Studies"
5. *Dr. Conrad Winer* — "Thermography"

## SPEAKERS

**Dr. Nikolai BOGDUK**

Senior Lecturer, Department of Anatomy, The University of Queensland. Visiting Medical Officer, Pain Clinic, Princess Alexandra Hospital, Brisbane.

**Dr. Brian CORRIGAN**

Senior Specialist in Rheumatology, Concord Hospital, Sydney.

**Mr. Peter DWYER**

Barrister at Law. Hon. Secretary (Legal), Medico-Legal Society of N.S.W.

**Dr. Attila GYÖRY**

Director, Rehabilitation Medicine Department, Concord Hospital, Sydney. President, Australian College of Rehabilitation Medicine.

**Dr. Peter HENKE**

Director, Department of Rehabilitation Medicine, St. George Hospital, Sydney.

**Assoc. Prof. Richard F. JONES**

Associate Professor, Division of Community Medicine, University of N.S.W. Director, Spinal Unit and Rehabilitation Medicine, Prince Henry Hospital, Sydney.

**Dr. Pesi KATRAK**

Consultant in Rehabilitation Medicine, Royal South Sydney Hospital.

**Dr. Peter KITCHENER**

Radiologist, Sydney C.T. and M.R., Edgecliffe, Sydney.

**Dr. Stan LAMOND**

Senior Staff Radiologist, Neurosurgery, Royal Prince Alfred Hospital.

**Dr. Peter MILBURN**

Senior Lecturer, Biomechanics, School of Health Sciences, The University of Wollongong.

**Dr. Ian PORTEK**

Consultant Rheumatologist, The St. George Hospital and The Western Suburbs Hospital, Sydney.

**Dr. Loren H. REX**

Past Associate Clinical Professor, Department of Biomechanics, Michigan State University. Guest Lecturer: The University of Calgary, The University of British Columbia, The University of Saskatchewan, Dalhousie University.

**Dr. Michael D. RYAN**

Senior Lecturer, Sydney University, Orthopaedics and Traumatic Surgery, Department Orthopaedics and Traumatic Surgery, The Royal North Shore Hospital, Sydney.

**Prof. Noel SVENSSON**

Professor of Mechanical Engineering, Dean of Faculty of Engineering, University of N.S.W.

**Dr. Conrad WINER**

Director, Department of Rehabilitation Medicine, Royal Prince Alfred Hospital, Sydney.

**Dr. John YIANNIKAS**

Consultant Cardiologist, Royal Prince Alfred Hospital and Concord Hospital, Sydney.

## THE ANNUAL GENERAL MEETING

OF

### THE AUSTRALIAN ASSOCIATION OF MUSCULOSKELETAL MEDICINE

will be held at 4.30 p.m. on Friday, 14th November, 1986, in the Schlink Lecture Theatre of the Royal Prince Alfred Hospital, Sydney. All members of the Association are urged to attend.

## SOCIAL PROGRAMME

**THURSDAY, 13th NOVEMBER, 7.30 p.m. Cocktail Party**, at the Bligh Room, The Camperdown Travelodge, Cnr. Missenden Road and Marsden Street, Camperdown. Cocktails and light supper.

**FRIDAY, 14th NOVEMBER, 7.30 p.m. Wine Tasting**, The Wine Society Cellars, 126 Sussex Street, Sydney.

Ten fine Australian wines for tasting, with full description and discussion by resident wine expert. Includes smorgasbord supper. Limited to 55 persons.

**SATURDAY, 15th NOVEMBER, 7.30 p.m. A.A.M.M. Annual Dinner**, Sydney University Refectory, Holme Building, University of Sydney Union. Dress: lounge suit.

## PRE-CONFERENCE WORKSHOP

A one-day practical workshop entitled "**Comprehensive Examination of the Low Back Pain Patient**" will be held in the auditorium of the Queen Elizabeth II Rehabilitation Centre from 9.00 a.m. to 4.30 p.m. on **Thursday, 13th November, 1986**. Enrolment will be limited to 90 participants. The workshop will cover all aspects of physical examination, with emphasis on soft tissue assessment, examination of individual spinal segments, mobility tests and clinical signs of non-organic disorders.

## TRAVEL

Air travel concessions are available from **Ansett** and booking agents should be asked to contact that airline's Convention Travel Department, quoting reference number J52FM4 and file number 1371, before making reservations.

## ENQUIRIES

A.A.M.M. Annual Scientific Meeting, C/- Dr. Conrad Winer,  
149 Macquarie Street, Sydney. N.S.W. 2000. telephone (02) 27 8926

# THE CERVICAL SPINE: FUNCTION AND DYSFUNCTION

David Vivian

Brighton Spinal and Sports Medicine Clinic,  
Brighton, Victoria, 3186

## STRUCTURAL ANATOMY

The **seven cervical vertebrae** each consist of a body anteriorly, two pedicles, two articular pillars, two transverse processes and two laminae which join posteriorly to form a spinous process. The lower five vertebrae are similar in shape and are considered typical. The upper two (atlas and axis) are quite different both in morphology, especially anteriorly, and in function.

Cervical spinous processes are mostly short and bifid, suggesting little muscle insertion; the exceptions are C2 and C7 whose spinous processes are quite prominent.

There are **five joints** connecting adjacent vertebrae at each level from C2/3 to C6/7: the intervertebral disc, two neurocentral joints (not present in the lumbar spine) and two apophyseal joints.

The mobility of the cervical spine is governed by its morphology. The shapes of the vertebrae and the orientation of the facets favour flexion and extension and permit coupled rotation and sideflexion. The widest disc spaces are at C4/5 and C5/6 and these are the levels of greatest mobility in the C2/7 segment. The atlanto-occipital and atlanto-axial articulations are unique and have special movement patterns; there are no intervertebral discs at these levels.

The **intervertebral foramen** is bound medially by the neurocentral joint and laterally by the apophyseal joint.

There are **eight cervical nerves**, the first issuing at the atlanto-occipital level (i.e. above the first vertebra), the second to seventh also above each vertebra of similar numeric designation and the eighth issuing below the seventh vertebra at the C7/T1 level.

The ventral and dorsal nerve roots pass into the intervertebral canal to form the spinal nerve and emerge from it as the anterior and posterior primary rami.

The recurrent meningeal nerve branches off from the nerve root in the canal to supply the dura of the anterior part of the nerve sheath and the spinal cord, the posterior longitudinal ligament, the periosteum of the vertebral body and the annulus fibrosus of the disc.

The anterior primary ramus communicates with the sympathetic ganglion and goes on to join the nerve plexi supplying the anterior structures of the neck and the structures of the arm.

The posterior primary ramus wraps around the apophyseal joint and gives off articular branches supplying that joint and the joints above and below it (i.e. the apophyseal joints are supplied pluri-segmentally).

The **vertebral artery** arises from the subclavian and ascends through the foramina in the transverse processes of all the cervical vertebrae except C7, emerging from the transverse foramen of the atlas on the medial side of the rectus capitis lateralis muscle; it then forms a loop to wind backwards behind the lateral mass of the atlas and lies in a groove on the upper surface of the posterior arch of that bone before turning upwards again to enter the foramen magnum and become the basilar artery. In its upward course it lies in front of the anterior rami of nerves C2 and C6; the loop lies laterally to the anterior ramus of the C1 nerve.

The **cervical curvature** is lordotic in the anatomic position. The lordosis begins at C1 and ends at T2. In the cervico-thoracic region there is often a slight lateral curve concave to the right in right-handed people and to the left in left-handers.

## SURFACE ANATOMY

The **transverse process of C1** is easily palpated between the ramus of the mandible and the mastoid process on each side.

The **spinous process of C2** is the bony prominence below the occiput in the midline posteriorly.

The **spinous process of C7** is the *vertebra prominens* at the base of the neck posteriorly.

The apophyseal joints lie 1 to 2 cm. lateral to the spinous processes.

The antero-lateral margins of the vertebral bodies can be palpated antero-medially to the sterno-mastoid muscle.

## FUNCTIONAL ANATOMY

The average **total ranges** of cervical spinal movements measured according to the S F T R (sagittal, frontal, transverse, rotational) system are:

S 40° — 0 — 40°  
F 45° — 0 — 45°  
R 85° — 0 — 85°

Note that sideflexion and rotation are coupled movements: they always occur together and to the same side.

The **component ranges** measured for the various functional segments are:

	O/C1	C1/2	C2/6	C6/T3
Flexion	10°	5°	25°	10°
Extension	15°	5°	25°	10°
Sideflexion	5°	0°	30°	15°
Rotation	5°	35°	40°	15°

These ranges are approximate only: wide variations have been reported by different observers using different methods and different subjects.

## **TYPICAL PAIN SYNDROMES RELATED TO THE CERVICAL SPINE**

### **Cervical headaches:**

These are usually felt spreading from the occipital to the fronto-temporal or retro-orbital regions. The pain can be "like a migraine". Headaches of cervical origin usually derive from the upper three cervical joints and the surrounding soft tissues.

If a patient presents with an occipito-frontal headache and positive upper cervical joint and soft tissue signs (including reproduction of the pain on local palpation) the practitioner can assume only that the cervical spine may be one factor contributing to the headache. If soft tissue stretching, joint mobilisation, exercises, etc. result in alleviation of symptoms for a prolonged period, the neck can be considered the probable site of origin of the headache.

So, cervical dysfunction may be a primary cause of headache, especially after a "whiplash injury". It should also be considered in the list of aggravating factors (like red wine, etc.) for those predisposed to headaches for other reasons.

Ergonomic stresses can play an important role in the aetiology of cervical headache. The Czechoslovakian orthopaedic physicians have noted a significant increase in children's headaches since the changeover of school desks from the angulated form to the flat top. Since partial re-introduction of the angulated desk, the incidence of headaches in the relevant group has decreased. Students reporting headaches were found, in general, to have upper cervical dysfunction.

### **Neck ache:**

This is a common symptom and can arise from any of the cervical structures. Like low backache, it has its highest incidence in the 15 to 50 year old age group. There is consequently little correlation between neck ache and Xray changes.

Dysfunction of the mid-cervical joints is the most common clinical finding. However, other cervical and thoracic joint and soft tissue signs usually co-exist.

### **Wry neck:**

This usually affects the 10 to 30 year old age group. The patient generally wakes with unilateral pain and almost total inability to sidebend and rotate the neck to the painful side or to extend it. The head is held sidebent away from the painful side.

The condition is often found to be due to mechanical dysfunction of one apophyseal joint, most commonly at C3/4, sometimes at C2/3 or C4/5.

Possible mechanisms involved in the pathogenesis include:

i) apophyseal joint entrapment: the synovial meniscoid villus becomes impacted, causing loss of facet mobility.

ii) local oedema: abnormal posture leads to a localised stretching injury, with oedema and loss of function but no entrapment.

iii) disc pathology: intra- or extra-disc protrusion of nuclear material; probably uncommon.

Most wry necks respond well to rest and their progress may be hastened by physical therapy. Some patients do have prolonged histories and may go on to develop signs of cervical nerve root irritation, suggesting disc pathology.

### **Trapezius/shoulder pain:**

Pain in the top of the shoulder is sometimes a diagnostic problem but it should not be. Pain originating in the shoulder joint is not usually felt proximally to the site of injury. Local muscle strains usually heal within a few days. So, consider the cervical spine as the possible origin of pain in the trapezius region: the problem is often at the C3/4 level.

### **Radicular arm pain:**

In many cases the pain is experienced almost exclusively in the arm. Neck pain may be absent. The C7 nerve root is that most commonly involved. Neurological signs suggest nerve root irritation. Plain Xrays may be normal or may show degenerative changes at the relevant level. CT scanning may be much more helpful.

Neurological deficit usually resolves within six months and radicular pain, even if untreated, within a similar time. Physical treatment may be helpful but must be undertaken with great care. Surgical intervention is sometimes necessary: the main indications for surgery are progressive neurological deficit and severe pain which does not remit over a prolonged period. ■



# CERVICAL TRACTION

David Vivian

Brighton Spinal and Sports Medicine Clinic,  
Brighton, Victoria, 3186

Gentle traction is one of the least invasive of all musculoskeletal treatment modalities. It may be applied to the cervical spine in many ways and for a number of reasons.

The principal variations are related to the method of application, the direction of pull of the distracting force and the duration of treatment.

## METHODS OF APPLICATION:

1. **Manual Traction:** This may be applied using the hands only or the hands and a shoulder; a traction belt may also be used for an assisted manual technique.
  - (a) **Hands:** The patient lies supine. The operator stands at the head end of the couch. With one hand he spans the back of the patient's head, just above the occipital crest (avoiding pressure on the region of the sub-occipital muscles, which is often tender even in normal subjects). The operator's other hand is cupped under the patient's chin (avoiding pressure on the larynx and the carotid sinuses). Traction is applied gently by the operator leaning backwards, using his body weight for the distracting force rather than the muscular pull of his arms. The distraction should be increased gradually, held steadily at the required tension, then decreased gradually for an overall smoothness of technique.
  - (b) **Hands and shoulder:** The operator's left hand holds the occiput, his right shoulder grips the patient's forehead (taking care not to push on the nose) and the right hand is free to assist the left hand or to be cupped under the chin.
  - (c) **Belt assisted:** The belt is looped around the operator's waist and it crosses his arms to run over the backs of his fingers as he holds the patient's occiput with both hands. Traction is assisted by leaning back against the belt.
2. **Machine Traction:** Harnesses, ropes, pulleys, weights and motor driven machines can be employed in various combinations and configurations to provide cervical traction. Auto-traction may be administered by the use of a harness, rope and pulley.

## DIRECTION:

Generally the patient lies supine. Distraction may be applied with the patient's head in:

- the neutral position
- flexion
- sidebending
- rotation
- three dimensions: combinations of the above.

## DURATION:

Cervical traction may be maintained for lengths of time from a second or two up to several hours or even days. Accordingly, the procedure may be classified as:

- (i) **Intermittent:** The distracting force is applied gradually, held momentarily and then released. This sequence may be repeated a number of times in a single session of treatment. In turn, treatment sessions may be repeated daily over a number of days.
- (ii) **Sustained:** Traction of unchanging pull is maintained for a time interval from a few minutes up to a few hours.
- (iii) **Continuous:** The traction is continued for several hours or longer, sometimes for several days with the patient in bed (usually in hospital). These longer periods of cervical traction generally need to be interrupted for at least several minutes each day to prevent the development of pain from constant pressure on the teeth, gums and temporo-mandibular joints.

## INDICATIONS:

Traction is indicated in circumstances in which approximation of anatomical structures is relevant to the pathogenesis. Many common conditions of mechanical dysfunction which cause neck pain and stiffness, including muscular hypertonicity, joint hypomobility and nerve root irritation are suitable for at least a trial of traction.

Traction may be used alone, as part of a sequence of soft tissue stretching techniques or as a preliminary to, or part of, joint mobilising procedures: note that some degree of traction, even if only the "piccolo traction" of Kaltenborn, is

essential before mobilisation can occur.

If nerve root pain and neurological signs are present, traction is often the treatment of choice: other modalities may be contraindicated on grounds ranging from inappropriateness to extreme danger. Maitland states that patients with radicular arm pain and restriction of lateral flexion and rotation of the neck to the painful side are best treated by cervical traction in flexion.

#### CONTRAINDICATIONS:

Cervical traction should not be used when there is instability of cervical spinal joints or of any bone of the head and neck (as when fractures are present); it should also be avoided in conditions of bone frailty and potential instability, such as neoplasia, osteoporosis, rheumatoid arthritis, other inflammatory diseases, etc. Ligament laxity and joint hypermobility are likely to be made worse by traction. Vertebro-basilar insufficiency should be excluded if possible before traction is applied and treatment should be discontinued if the patient complains of any form of dizziness. Temporomandibular joint irritability may preclude the use of traction unless it can be applied without placing pressure on these joints. In fact the exacerbation of symptoms in any condition suggests that traction is inappropriate in its point of application, direction of pull, strength or duration.

#### FURTHER COMMENTS:

Care must be taken with traction as with all other modalities of treatment. Initially, short applications of treatment should be tried and the patient's reaction noted. The need for repeated or longer applications should be titrated against the response.

In general, the more severe the pain, the gentler and shorter should be the trial of treatment.

In painful conditions with marked muscular hypertonicity, sudden release of traction may lead to an exacerbation of pain. Both the application and the relaxation of the distracting force should always be gradual.

A trial of manual traction should be assessed before mechanical traction is implemented.

The position of the patient's neck is determined by the site of dysfunction. Generally, the lower in the cervical spine the problem, the more flexion is required. If certain neck positions or movements are painful, traction should be applied only in positions of comfort. If multiple problems are present and there is any doubt about the contribution of each, traction is best started in a neutral position.

During manual traction, movement at a restricted segment should be felt with a forefinger at the appropriate level, if possible.

Manual traction treatment will often need to be given for 15 - 20 minutes at a time for a sustained effect.

Traction may be used as an alternative to more forceful modalities such as spinal manipulation. For many conditions traction is often as, or more, effective and may be much more comfortable, and safer, for the patient.

*FOOTNOTE: The details of methods stated are not intended for primary instruction but rather for the comparison or checking of methods by those familiar with the techniques. Physical modalities of treatment can only be properly learned from practical teaching rather than from abstract sources. ■*

## 1985 Annual Conference tapes

*The proceedings of the scientific meetings at the 1985 A.A.M.M. Annual Conference were recorded on cassette tapes. A full set of tapes can be obtained for only \$20 plus postage from*

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# CATASTROPHES FOLLOWING FORCEFUL CERVICAL MANIPULATION

## A Review of the Literature

**Conrad Winer**

Director, Department of Rehabilitation Medicine  
Royal Prince Alfred Hospital, Sydney, NSW, 2050

Up to 1979 at least twenty-one papers had been published describing injury or death following forceful spinal manipulation. The techniques used were either chiropractic manipulation or manipulation under general anaesthesia. The injuries included dislocations of the atlas (Blaine 1925), death resulting from chiropractic manipulation for headache (J.A.M.A. 109: 233, 1937), spinal injuries (Pratt-Thomas 1947), dissecting haematoma of the internal carotid artery (Beatty 1977) and rupture of brain tumour (J.A.M.A. 148: 669, 1952) but the majority of injuries described were cerebral or cerebellar infarction. Up to 1979 twenty-seven cases of neurological deficit directly attributable to cervical manipulation had been described in the English literature.

If we add to these the cases reviewed by the German Association of Manual Medicine in 1979, we have a total of 58 reported tragedies following cervical manipulation up to 1979.

The following are abstracts of papers in the English literature since 1980.

**Krueger, B.R., Okazaki, H.**

(From the Departments of Neurology and Pathology of the Mayo Clinic)

### **"VERTEBRAL-BASILAR DISTRIBUTION INFARCTION FOLLOWING CHIROPRACTIC CERVICAL MANIPULATION"**

Mayo Clin. Proc. 55:322—332, 1980

*Previous case reports of vertebral-basilar system infarction following chiropractic cervical manipulation have emphasised the role of predisposing factors such as cervical spondylosis, atherosclerosis and congenital asymmetry of the posterior circulation. Ten patients without prior neurologic symptoms had vertebral-basilar system infarction promptly after chiropractic manoeuvres. One patient, who was free of clinical and radiographic evidence of predisposing factors, subsequently died. Autopsy studies revealed massive nonhemorrhagic brainstem infarction due to bilateral vertebral artery thrombosis. Nine patients survived with residual neurologic deficits due to lesions in various locations of the posterior circulation. No patient received anticoagulants. Previous case reports are summarised and the kinetic anatomy of the vertebral arteries is reviewed to clarify the potential mechanisms involved in the pathogenesis of this entity. Although a causal relationship may be difficult to establish in individual cases, cervical manipulation seems to be the major identifiable factor in the pathogenesis of stroke in some patients.*

**Schellhas, K., Latchaw, R.E., Wendling, L.R., Gold, L.H.A.**

(University of Minnesota Hospitals, Minneapolis)

### **"VERTEBROBASILAR INJURIES FOLLOWING CERVICAL MANIPULATION"**

J.A.M.A. 244:1450—1353, 1980

*Four cases of brainstem stroke syndromes followed mechanical cervical manipulation; vascular injury was confirmed angiographically. A comprehensive review of the literature on vertebrobasilar injuries disclosed the various mechanisms of injury and pathogenesis of subsequent vascular complications following cervical manipulation. Emphasis is given to the potentially devastating neurological complications, particularly in view of the increasing utilisation of chiropractic therapy.*

**Sherman, D.G., Hart, R.G., Easton, J.D.**

(From the Department of Neurology, University of Missouri-Columbia School of Medicine, Columbia)

### **"ABRUPT CHANGE IN HEAD POSITION AND CEREBRAL INFARCTION"**

Stroke, 12:2—6, 1981

*Eight patients are described who developed infarctions in the vertebral-basilar artery distribution following chiropractic neck manipulation or spontaneous head turning. The angiographic and autopsy findings indicate that injury to the intima of the vertebral artery at the atlantoaxial joint forms a nidus for thrombus formation which may propagate or embolize to involve other vessels in the vertebral-basilar system and result in progressive brainstem infarction. The role of anticoagulation in these patients is discussed and recommended.*

NOTE: The Editorial in the same issue of *Stroke* (12:1, 1981) emphasises: "The exact instance of vertebral artery injury during manipulative therapy is unknown but a recent audience poll, at a meeting of the Stroke Council of the American Heart Association, suggested this is far more common than the literature would reflect."

**Kewalramani, L.S., Kewalramani, D.L., Krebs, M., Saleem, A.**

(Louisiana State University School of Medicine, Louisiana, and Baylor College of Medicine, Texas).

### **"MYELOPATHY FOLLOWING CERVICAL SPINE MANIPULATION"**

*Am.J.Phys.Med.* 61:165—175, 1982

Three cases are presented. All patients noted increase in cervical pain immediately following manipulation, though the progression of neurological deficit was gradual. Significant sensory and motor deficit developed within twenty-four hours, with continuing gradual progression to quadriplegia, and the patients did not seek medical help until 48—72 hours after manipulation. No mention is made of who performed the manipulations. Case 1: A young lady of 23 had noted pain and stiffness of the neck off and on for several weeks. She underwent cervical manipulation and when admitted to hospital three days later she had quadriplegia below C5. She had a fracture of C6 vertebral body and pedicle with unilateral facet luxation at C5/6. Two days after admission she underwent cervical laminectomy at C5/6. She progressively improved and achieved total independence in all activities of daily living over a period of 16 weeks; mild global weakness persisted for about one year. Case 2: A 46 year old man with multiple sclerosis noticed tingling in the left hand one day. Two days later he experienced severe pain in the neck, back and shoulders. Cervical manipulation was performed. Gradually over a period of ten days he developed paralysis of the lower limbs and loss of bladder and bowel functions; this was followed by increasing paralysis of both upper limbs. He was admitted to hospital four weeks after the manipulation; laminectomy was performed at C4/C7, and the cause of the cord damage was found to be a haematomyelia. The hypothesis is that the tingling in the hand and the pain in the neck and shoulders may have been due to a small intraspinal subarachnoid haemorrhage, and that the manipulation caused further bleeding. The patient was left with permanent paresis in the left upper limb and both lower limbs, being ambulatory with a long leg brace on the left and a short leg brace on the right side. Case 3: A 62 year old data processing engineer noted sudden pain in the neck, which persisted, and twelve days later underwent manipulation. He became quadriplegic within two hours. X-rays prior to manipulation showed osteoporosis of C4 and C5 and mild spondylotic changes. The patient was admitted to hospital three days after manipulation and at surgery C5 vertebral body was found to be collapsed. Interbody fusion of C4—C6 was performed. Eight months later he had useful function in his upper limbs, but no useful function in the lower limbs and he remained in a wheelchair.

**Winer, C.E.R.**

(Department of Rehabilitation Medicine, Royal Prince Alfred Hospital, Sydney).

### **"DEATH OR STROKE FOLLOWING CERVICAL MANIPULATION IN AUSTRALIA"**

*Proc. of Congress of Int.Fed. of Manual Med.* Zurich, 1983

One death occurred following a manipulation by a medical practitioner, using the Cyriax technique, in Sydney in 1980. The other five tragedies occurred following cervical manipulation by chiropractors. Paraplegia was caused by a chiropractor in Albury in 1978. Incomplete quadriplegia followed a manipulation in Melbourne in 1981. In 1983 a patient died in Newcastle following cervical manipulation; the patient had a malignant tumour in the cervical spine; the chiropractor had not taken an X-ray. In July 1983 another death occurred in Sydney following cervical manipulation; the patient died within two days. The following month a patient was admitted to hospital in Kogarah with hemiplegia; the therapist was the same chiropractor as in the last case involving the fatality.

**Robertson, J.T.**

### **"NECK MANIPULATION AS CAUSE OF STROKE"**

*Stroke* 13:260—1 1982

The author describes a survey which yielded 360 additional cases of stroke following cervical manipulation. Full details are not provided. The purpose of the survey was to demonstrate that many such cases come to the attention of medical practitioners and that most of the cases are never reported in the literature.

Daneshmend, T.K., Hewer, R.L., Bradshaw, J.R.  
(Frenchay Hospital, Bristol).

**"ACUTE BRAIN STEM STROKE DURING NECK MANIPULATION"**

Brit. Med.J. 288:189 1984.

A 31 year old man consulted an osteopath for relief of neck pain. Neck manipulation proceeded no further than rotation of the head to the right; immediately the patient complained of tingling in the right limbs and right side of the face, followed by slurred speech, double vision and incomplete left facial palsy. He was admitted to hospital within one hour. There was no weakness of the limbs, but he was unable to stand initially because of ataxia. The patient improved without treatment. An aortogram one week after the stroke showed an irregular and narrowed left vertebral artery, with occlusion at the site of the passage between C1 and C2 vertebrae; these changes were consistent with a traumatic thrombosis of this vessel at C1/2. At review six months after the stroke the patient had returned to his job as a fork lift driver.

Putnam, T.D., WU, Y.

(Department of Rehabilitation Medicine, Northwestern University Medical School, Chicago).

**"TRACHEAL RUPTURE FOLLOWING CERVICAL MANIPULATION:  
LATE COMPLICATION POST-TRACHEOSTOMY"**

Arch.Phys.Med.Rehabil. 67:48—50 1986

A 34 year old man presented with an anterior neck abscess. The abscess developed four days after a cervical manipulation performed at a local health club without his permission by an unlicensed blind masseur. Twenty-five years previously the patient had sustained third degree burns, including the anterior surface of the neck. At that time the patient had required emergency tracheostomy during intraoperative respiratory distress while undergoing extensive skin grafting and wound debridement. The tracheostomy site had been completely healed and closed for the 25 years subsequently. It is hypothesized that the manipulation caused a tear in the anterior tracheal wall followed by recurrent abscesses and tracheocutaneous fistulae. Complete resolution of symptoms followed antibiotics and surgery. The previous history of a tracheostomy should alert the practitioner to the high risk of tracheal rupture with cervical manipulation. With advances in medical intensive care more individuals are surviving with subsequent healed tracheostomies.

**CONCLUSIONS FROM THE LITERATURE REVIEW:**

1. The majority of the tragedies described followed manipulation by chiropractors.
2. Precise diagnosis of specific mechanical dysfunction, together with assessment of possible contra-indications to treatment, are the only rational bases for manipulative therapy.
3. It is clear from the literature that tragedies can occur with patients who are apparently healthy young adults and in whom vertebro-basilar insufficiency and other dangerous conditions may be unsuspected.
4. The safest management approach is to use soft-tissue techniques (in contrast to manipulation of the joints) as the initial treatment of choice. From this, if necessary, one can upgrade to gentle, rhythmic spinal mobilisation, employing methods such as post-isometric relaxation. The gentlest techniques should be used and upgraded only if necessary.
5. The patient's responses and physical signs should be monitored throughout every treatment procedure.
6. Cervical manipulation should only be resorted to if specific dysfunction persists after soft-tissue techniques and mobilisation. If manipulation is used, it should be (i) specifically localised to an individual intervertebral joint level, (ii) be preceded by the taking up of all slack in the soft tissues, (iii) be of high velocity and low amplitude, and (iv) be gentle.
7. Consideration of points 2, 4, 5 and 6 could probably have prevented all of the catastrophes described.
8. Other than the one relatively minor case reported above by Daneshmend et al., no reference was found in this extensive literature survey to describe death or long-term sequelae following manipulation by the osteopathic technique. ■

# F.I.M.M. MEMORANDUM ON THE PREVENTION OF ACCIDENTS ARISING FROM MANIPULATIVE THERAPY OF THE CERVICAL SPINE.

Declaration of the Presidium of the German Association of Manual Medicine (D.G.M.M.):  
presented to F.I.M.M. in 1979 and adopted as policy of the international Federation and the national  
associations belonging to it.

## FOREWORD

Several typical cases have prompted us once more to warn all colleagues who perform manual medicine of the dangers which can arise if manipulation is carried out in the region of the cervical spine without correct indication and techniques.

In view of the small number of cases, however, the risk is not very great. The greatest risk known in manipulative therapy remains that of lesions of the vertebral artery which may cause only temporary symptoms but may even have a fatal outcome.

The first part of this paper details autopsy findings and the conclusions based on them, objectivising the dangers.

In the second part practical aspects are discussed, helping the physician to recognise the danger in time or to avoid it by the aid of sophisticated techniques.

Only if the measures described here have been correctly followed (and this is evident from the documentation) can it be asserted that the accident could not be foreseen; only in such cases can the doctor count on help in any legal suit which may follow.

The contents of this declaration correspond to present medical knowledge and experience and represent the official view point of our association.

## AUTOPSY FINDINGS OF THE VERTEBRAL ARTERY FOLLOWING CERVICAL MANIPULATION

Since 1947 there have been an increasing number of accidents reported which followed manipulation of the cervical spine. This danger concerns the vertebral arteries in particular and in this connection especially the basilar artery. This conclusion may be drawn from the vascular origin of many clinical and/or autopsy findings in neurological syndromes due to lesions of the caudal brain stem and the cerebellum (Gillian, 1964).

A survey of the literature (Schmitt, 1978 a) dealt with 31 accidents of which 11 were fatal. Later reports brought this number up to 36 (Kipp, 1975, Pfeiffer et al., 1978 and additional reports in Schmitt, 1978 b); Schiötz and Cyriax (1978) added some more cases which were not taken into consideration by Schmitt since their paper appeared in England.

From the case reports it can be assumed that of those cases which were adequately examined clinically and at autopsy, one third showed vascular occlusion due to

thrombosis; in a further five cases this can be inferred. The arteries mainly involved were the vertebral arteries (usually on one side) and the basilar artery and its branches; the posterior cerebral arteries were only exceptionally involved (Ford et al., 1956, Miller et al., 1974).

Numerous data from injuries (Pratt-Thomas et al., 1947, Kuhlendahl, 1957, Moser 1964, Herrschaft, 1971, Mazer et al., 1971, etc.) suggest that the unprotected extracranial section of the loop of the vertebral artery between the axis and the atlanto-occipital membrane is the most susceptible.

From localisation of vascular obliteration it may be assumed that the origin of thrombosis may not be limited exclusively to the vascular area of irritation but that thrombosis may also affect more caudal areas.

In those patients who survived the accident there are no data concerning the vertebro-basilar arteries, because no arteriography was carried out afterwards.

In some cases thrombotic occlusion could be ruled out (Pratt - Thomayx et al., 1947, case No. 3; Kipp, 1975; Nyberg - Hansen et al., 1978). In a few cases vascular spasm was found (Kanshepos et al., 1972) or discussed (Lyness et al., 1974; Mehlic et al., 1974).

In two cases a pseudoaneurysm was visualised: (one of the vertebral artery (Davidson et al., 1975) and one of the internal carotid artery at the level of the atlas (Lyness et al., 1974). In such cases serious damage to the vessel wall must be assumed.

In one case rupture of the left vertebral artery with an intramural obliterated haematoma without an associated fatal vascular disease was shown at autopsy (Schmitt et al. 1973).

Altogether signs of previous vascular disease, e.g. necrotic angitis (Orthmer quoted by Schmitt, 1978 b), fibromuscular dysplasia, fibroelastosis or saccular aneurysms (Pfeiffer et al., 1978) were so exceptional that the coincidence of vascular disease and manipulation as the cause of accident is very unlikely.

In general arteriosclerotic changes can not be considered as an important causal factor as in the large majority of cases the victims were young patients at an age where arteriosclerosis usually plays no role (compare Riesen, 1973).

Nor could serious lesions of the spinal column with involvement of the vertebral arteries be shown to be relevant, so far as X-ray pictures of the cervical spine were available.



It may therefore be assumed that as a rule the accidents are not the consequence of a tragic coincidence of fatal vascular disease or disease of proximal bony structures and manipulative therapy. On the contrary there is evidence of mechanical irritation or damage of intact vertebral arteries mainly in their upper extracranial course. Gurdjian et al. (1963) and Kuhlendahl (1964) assume mechanical impingement of the vessel wall. This may cause only minimal lesions of the vessel wall, in particular of the intima. These may, however, suffice to produce thrombus formation. This type of minimum lesion may be missed even by a thorough morphological examination, as lesions of the vessel wall causing thrombosis can be so small that they cannot be detected by morphological methods. This is especially so in the loop of the vertebral artery which is particularly difficult to examine. All these circumstances have to be borne in mind when evaluating morphological examination findings.

In addition reflex vascular spasm of the vertebral and basilar arteries produced by mechanical irritation is discussed (Gutmann et al., 1959; Kunert, 1962). This interpretation appears probable particularly in cases of complete or major recovery from residual neurological change.

Numerous investigators (Holzer 1955/56, Kunert 1961, Gutmann 1962, Hardesty et al., 1963, Herrschaft 1971 etc.) have established that even under normal conditions maximum head rotation is liable to interfere with the blood flow in the vertebral artery on the opposite side from the rotation. Nevertheless it cannot be deduced from this that direct compression lasting only for some seconds could by itself have serious neurological consequences. A vascular spasm lasting longer than the therapeutic manoeuvre might provide a better explanation. This might also favour thrombus formation. Such a spasm would be particularly deleterious in the presence of severe one-sided hypoplasia of the vertebral artery (Krayenbuhl et al., 1957; Dieckmann 1966; Russel 1960).

Considering the cases dealt with in this survey there can be no doubt that there is a true causal relationship between cervical manipulation and the neurological sequelae of the accident, as clinical symptoms usually appeared immediately or only a few minutes after treatment.

Spontaneous thrombosis of the vertebral or basilar arteries in young subjects or in young adults is so rare that mere coincidence with manipulative therapy can be ruled out.

At autopsy it is not possible to say which kind of manipulation caused the accident, from the case report, because the pertinent data are almost without exception insufficient. It can however be inferred from the majority of the reports that extension, flexion and rotation of the cervical spine, or a combination of these manoeuvres, was carried out. In a few cases such additional information about the type of manipulation as the description "forceful", "sudden", "painful", and in one case "to the point of cracking" (Green et al., 1939; Schmitt 1978) lead us to the conclusion that considerable force has been applied.

## CLINICAL INDICATIONS OF RISK

### The history and the clinical picture.

The clinical picture of irritation, lesion or compression of a vertebral artery resembles the clinical picture of blockage in the region of the craniocervical junction, but can be distinguished from it by certain unequivocal characteristics. Vertebral artery involvement may produce true loss of consciousness, including even falls and convulsions. In mere blockage there may be dizziness with various sensory symptoms but never loss of consciousness.

No patient with a history of syncope with loss of consciousness or unsteadiness with drop attacks should be treated with cervical manipulation.

The age of the patient should not be considered a reliable criterion of pertinent vertebral artery involvement. It is, however, reasonable to be wary of specific manipulation in elderly patients with signs of arteriosclerosis and labile hypertension. From the cases presented it would seem that most of the fatalities occurred with patients between the ages of 30 and 50.

A history of previous accident after manipulation should be an absolute contra-indication. It is of particular interest whether such manipulation aggravated previous symptoms or produced new symptoms and in particular whether loss of consciousness occurred, with or without neurological signs.

After accidents of the cervical spine it is better to wait for two to three weeks, even if the bony and ligament structures have remained undamaged, until all acute lesions have recovered and even then to use the most gentle techniques under strict indications.

If more than two or three months have elapsed syncope with giddiness or drop attacks are warnings of vertebral artery involvement.

### Diagnostic Tests

Specific tests for vertebro-basilar blood circulation are as follows:

#### Provocation test (sitting):

The patient is seated. The examiner stands behind the patient and brings the patient's head into an extreme quadrant position combining:

- reclination
- side bending and
- rotation.

This test is carried out to both sides. It is advisable to start towards the side on which no symptoms are expected. If symptoms appear this is due to narrowing of the vertebral artery on the side to which the head was moved, as the opposite vertebral artery which normally supplies the blood for the vertebro-basilar circulation is compressed in the extreme position of the cervical spine.

### Hautant's test (sitting):

The patient is sitting and stretches both arms forward at the same height with the hands in supination (palms upward). The eyes are shut and the head moved slowly into the extreme quadrant position. If at the end of passive motion of the head one arm sinks with hand pronation, impaired blood circulation in the vertebro-basilar arteries must be expected.

### De Klejn's test (supine)

The patient lies supine in a position in which maximum reclination of the head can be carried out. The examiner sits behind the patient's head holding it in his hands. He brings the head into an extreme hanging position consisting of reclination, side bending and rotation. The head has to be firmly held and controlled in order to bring it back into a neutral position as soon as threatening symptoms appear.

### Underberger's test (marking time)

This is a modified Romberg's test. The patient stands with his eyes closed and arms stretched forward and is asked to mark time. The feet must be lifted clear of the ground. While marking time the patient moves his head slowly into the position of extreme rotation, side bending and reclination. During this most sensitive test the patient sways to the side if one vertebral artery is being compressed.

This test can, however, be positive if control of equilibrium is impaired by faulty afferent impulses from receptors in the region of the cranio-cervical junction as well as from the inner ear. In any case, the examiner should stand close behind the patient so as to give help if the patient is threatened by a fall.

## SPECIFIC CRITERIA OF MANUAL MEDICINE FOR AVOIDING ACCIDENTS ASSOCIATED WITH THE VERTEBRAL ARTERY.

### Specific diagnosis

It is considered that before manipulative therapy is applied a precise assessment of the vertebral column should be carried out, consisting of a detailed history, a general medical examination and specific clinical (and X-ray) examination of the segments of the spinal column.

On manual examination of sections of the vertebral column possible danger to a vertebral artery may be expected:

- a) if the patient has symptoms before reaching the end position of active head movement. This is particularly true for examination of the cranio-cervical junction.
- b) If the passive motion pattern is strikingly in disagreement with the pattern usually found in blockage.
- c) If blockage is entirely lacking but clinical signs nevertheless point to the cervical spine.
- d) If reflex segmental muscle hypertonus is lacking

entirely or its localisation, intensity and extensity are not characteristic.

- e) If the segmental signs of blockage (hyperaesthesia and hyperalgesia) are lacking or do not show the characteristic pattern.

## ASPECTS OF MANUAL THERAPY TECHNIQUES

Before performing specific manipulation the following should be considered:

- (i) No manipulation should be carried out without careful locking.
- (ii) At the end of locking the slack must be taken up. After having taken up the slack the therapist should stand by for a moment in order to make sure that in this extreme position of passive mobility the patient feels no pain or discomfort and no additional symptoms (provocation test). Only if the therapist has ascertained this may he carry out the thrust. If carried out in this way manipulation is painless and safe.
- (iii) The fundamental mistake is to "pull through", when there is no locking nor taking up of the slack but the head is forcibly moved from mid-position to end-position with high velocity, to "break a barrier". In the worst cases this is done without telling the patient so that all his protective mechanisms are taken by surprise and the full impact of the thrust hits the protective barrier.

It can be assumed — although not proved — that this type of "pulling through" coupled with inadequate diagnosis is the real mechanism which causes the accidents under discussion. A manipulation carried out *lege artis* never causes such a violent impulse, as acceleration takes place only through a very short distance, whereas during the "pull through" the long distance results in a considerable velocity and therefore in the accumulation of great force. In contrast to the "pull through", taking up the slack enables the therapist to re-examine the passive reflex resistance, even if in the case of a repeated treatment, so that he can again reassure himself that there really is blockage and therefore the correct indication for manipulative treatment. In other words: he can still change his mind.

- (iv) It is advisable to take up the slack again after manipulation and to spring the joint in order to make sure that the manipulation has had the expected effect and restored joint play.
- (v) Manipulation in extension and side-rotation must be avoided.
- (vi) It may be useful to point out that several new techniques have been recently developed which work without any high velocity impulse and yet give satisfactory results. These techniques use mainly the principles of muscle physiology e.g. Mitchell's "Muscle Energy Technique", the techniques of Gaymans and Lewit and all the other mobilisation techniques.

## DOCUMENTATION

If due consideration is given to the directives given in this memorandum the risks for the patient (and therefore for the therapist as well) are minimised. Doctors who have followed these principles have witnessed no accidents even after many years of practice. If in spite of these precautions an accident should occur the therapist can only guard against accusations of malpractice if there is precise documentation

- a) about the type and site of the lesion treated and
- b) about the type of therapeutic procedure, in particular about the technique and how it has been applied.

To do this no detailed description is required. Sketches and abbreviations are sufficient if they allow correct interpretation.

## FURTHER TRAINING

The only adequate protection against accidents during manipulative therapy is continued further training in all the fields of Manual Medicine. This training should be both theoretical and practical. It can only be carried out in courses in which techniques are taught and the student's skill tested. It would be desirable for training in courses to be supplemented by clinical work under the guidance of an experienced specialist. Postgraduate training is determined by the criteria required by law for the doctor's right to use the term Manipulative Therapy on his plate.

As Manual Medicine is developing rapidly in all aspects it is desirable that every person practising in the field should do his best to be up-to-date. Opportunities are offered by the D.G.M.M. in abundance. Courses are regularly organised so as to satisfy the needs of the experienced practitioner. The type and extent of such "postgraduate" training should be specified so that in case of need it can be proved.

Under present conditions a "therapist" without adequate and sufficiently qualified training could hardly be defended against the accusation of malpractice if he caused an accident.

## SUMMARY: TEN POINTS RELATING TO THE AVOIDANCE OF ACCIDENTS FOLLOWING MANIPULATION OF THE CERVICAL SPINE

- (1) Death after manipulation has been observed only after manipulation of the cervical spine. It is associated with vertebral artery problems and may be due to thrombosis interfering with blood flow in the posterior fossa. Such lesions are exceptional but have always to be kept in mind.
- (2) In the first place some anamnestic and clinical data are warning signs; syncope with unconsciousness, attacks of dizziness, severe pain of the head and neck in extreme motion of the cervical spine may indicate vertebro-basilar artery insufficiency.
- (3) Clinical tests pointing to vertebro-basilar artery involvement: the quadrant tests:
  - Provocation tests (sitting)
  - Hautant's test (sitting)
  - Dr. Klejn's test (supine)
  - Underberger's test (marking time)
- (4) On manual examination in cases of head and neck pain no typical blockage is found in (pure) vertebral artery involvement, even if the clinical picture is similar. Either there is no tenderness in springing in end position and no movement restriction or there are no reflex signs of a physiological reaction to nociceptive irritation.
- (5) There must be no specific manipulation without locking and taking up the slack.
- (6) The thrust may be given only after taking up the slack.
- (7) Only "pulling through", i.e. manipulation without taking up the slack, creates the danger of fatal accidents.
- (8) Satisfactory techniques of manipulation can be learned only in specific courses by practical instruction.
- (9) Documentation concerning clinical findings and the techniques used are strongly recommended.
- (10) Only if sufficient erudition, precise diagnosis and a correct manipulative technique can be proved, can a possible accident be confirmed as pure coincidence. ■

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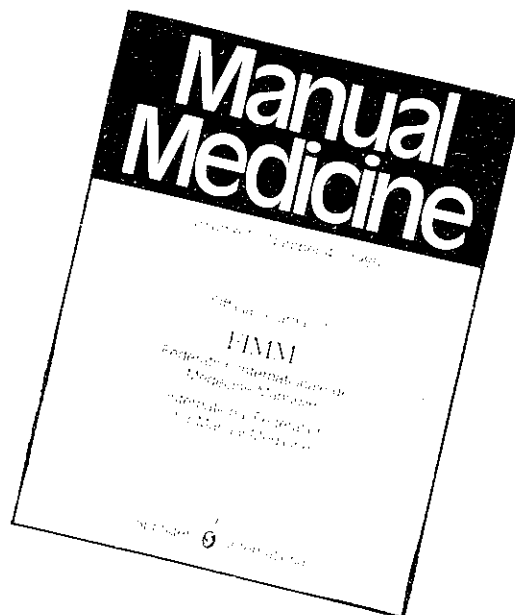
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## BOOK REVIEW

### **Understand Your Backache A Guide to Prevention, Treatment and Relief**

by Rene Cailliet, M.D.,  
F.A. Davis Company, Philadelphia, 1985

This is a comprehensive guide of 194 pages intended for the patient.

The first ninety pages are devoted to anatomy, especially functional anatomy, and causes of back pain. Simple diagrams with Professor Cailliet's characteristic figurative helpers assist in demonstrating how different forces act upon the spine. When he was in Melbourne at the recent Pain Conference he used these figures to great effect in his presentation on low back problems.

He discusses the mechanical causes of back pain, paying particular attention to poor posture and lifting techniques and their effects on the intervertebral joints and discs.

Examination is covered briefly, as is appropriate in a book intended for patients.

Treatment occupies the next forty-eight pages. Emphasis is placed on conservative physical measures, particularly postural correction and the use of exercises. The author provides answers to questions often asked by patients, and indeed by practitioners new to the field of physical medicine, such as: "Why, when and how should traction be used?", "Will a corset help?", "Are running and jogging good for the back?" and "When is surgery indicated?"

Mobilisation and manipulation are discussed briefly but no details of different methods are entered into. Injection treatments are not mentioned at all.

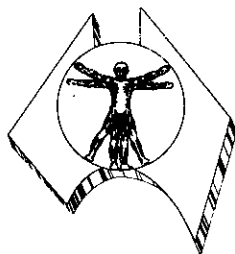
The latter sections of the book deal with other causes of back pain, such as spondylolisthesis and the arthroses, and with some aspects of the management of chronic pain, including T.E.N.S., biofeedback, acupuncture and psychotherapy.

This book is easy to read. It would provide a useful background for the newcomer to physical medicine who seeks a guide to the various causes of back pain and some information on the scope of management. The strong emphasis given to the use of exercises, and the discussion of flexion versus extension exercises, would be of interest to even the experienced practitioner actively involved in the field. Both groups may, however, consider the rather cursory attention given to manipulative therapy and the absence of any reference to injections as deficiencies in the book whether read by their patients or themselves.

The title suggests that this book is designed for patients. It is really far too comprehensive for this purpose alone. It seems that Professor Cailliet has not intended it to be a reference work for musculoskeletal physicians, hence the scant attention to some treatment techniques. However, it does make informative reading for those involved in back pain management and is recommended in particular for newcomers to the field and for patients interested enough to investigate the mechanisms of back pain and its treatment. ■

Price about \$22.

D. Vivian





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### **Correspondence (Second hand) on Dysphagia**

Our member John Fletcher of Hemel Hempstead draws our attention to some correspondence in the Journal of the Royal Society of Medicine on 'Foreign Body Sensation in the Throat'.

Mr. P.D. Sharma (E.N.T. Surgeon from Ashton-under-Lyne) wrote in the April 1985 issue of the Journal about a 60 year old healthy male with a 4 — 5 months history of a 'lump in the throat'. There was no loss of weight or appetite and no real dysphagia. No abnormality of the upper aerodigestive tract was found except bulging of the posterior pharyngeal wall shown by radiography to be due to osteophytes on the anterior surface of the cervical spine. The symptoms could be reproduced by touching the projections. The sensation in the throat occurred both during swallowing (Mr. Sharma attributed it to pharyngeal peristaltic movement passing over the spinal projections) and between swallows (which was not explained by his theory).

He had seen four other similar cases.

John Paterson, honorary secretary B.A.M.M., replied to this letter relating the cases described to the Barre-Lieou syndrome, one of the components of which is dysphagia, and suggested that the level of the causative lesion could be found by physical examination of the spine. Both anterior and posterior branches of the segmental nerves may be involved and the signs 'may be obliterated (sometimes) by directing therapy to the level indicated.

In the same issue (August 1985) Mr. J. McAuliffe Curtin of Dublin replying to Mr. Sharma's letter quoted T.V.L. Crichlow (Consultant Radiologist, Westminster Hospital) whose barium swallow studies showed spasm of the cricopharyngeal muscles, due to impingement of cervical spinal osteophytes. Mr. Curtin reported seeing many similar cases in a high proportion of which the mere passage of the oesophagoscope relieved the symptoms.

Mr. Sharma was shown the letters, remarked that John Paterson's proposals were not valid since the Barre-Lieou syndrome arises in connection with trauma to the cervical spine and his cases did not. He stated that the only proof of his hypothesis came from Mr. I.G. Robins who operated on a case of lump in the throat and removed an anterior cervical 'lobster claw' osteophyte with complete relief of the pharyngeal symptoms.

By now Mr. Sharma rather wished that he had kept his discovery to himself. It appeared likely that the sensation of a mass in the throat, even when peristalsis was not occurring, was due to posterior pressure on the pharyngeal muscles. Like all gut muscles those in the pharynx are particularly sensitive to stretching. A deep cervical lordosis might be expected to produce this effect or the inflammatory swelling round muscle and ligamentous attachments on the anterior aspect of vertebral bodies (enthesopathies) some years before the production of Xray visible osteophytes could cause the feeling. That first letter on the subject showed how often patients, dissatisfied with otopharyngeal surgeon's policy of watchful expectancy, abandoned him and sought through family practitioners another solution. The patient who does not come back is not always a cure!

The correspondence ended with a most scholarly letter from John Fletcher (January 1986) which we are quoting from the Journal of the Royal Society of Medicine by permission:

"Sir, With reference to Dr. P.D. Sharma's letter (April 1985 J.R.S.M., p.348), in carrying out a three-year survey in general practice on pain referred from the cervical spine I noted a group of patients complaining of a sensation of a 'lump in the throat', many of whom had been treated with antibiotics without benefit and labelled 'viral'. If they did not get better, they were referred to an E.N.T. Department where all investigations were negative, the more nervous women among them being labelled 'globus hystericus'. In this group of patients I found there were consistent physical signs, ie local tenderness over the greater cornu of the hyoid bone, sometimes bilateral, sometimes unilateral and for some reason very common on the right side.

Correspondingly, there was local tenderness over the facet joints between the atlas and axis with restriction of lateral mobility and often alteration of rotation alignment. In some cases the atlanto-occipital joint was involved as well. On correcting this slight alteration of alignment and restoring full mobility by local manipulation of the cervical spine, I found that I could also consistently relieve the local tenderness over the greater cornu of the hyoid bone and also the sensation of the lump in the throat.

The local tenderness over the greater cornu of the hyoid bone I attributed to spasm of muscles attached to the hyoid bone and involving the swallowing mechanism. Anterior root fibres from C2—C3 form the descendens cervicalis, which joins with a branch from C1 via the hypoglossal nerve to form the ansahypoglossi, which supplies nerves to the sternohyoid, sternothyroid, thyrohyoid, geniohyoid and superior and inferior bellies of omohyoid muscles. However, it may be that the tension is best felt in the hyoglossus muscle, which is acting as an antagonist and is inserted into the lateral part of the body and the whole of the greater cornu of the hyoid bone.

I suggest that irritation of anterior fibres of C2—3, and to a lesser extent C1, with spasm of the muscles attached to the hyoid bone, is the mechanism which accounts for the lump in the throat sensation and is unrelated to osteophytes apart from the fact that they may indicate a greater likelihood of cervical spondylosis.

While injury accounts for some of these cases, the vast majority are associated with postural malalignments, commonly in the lower cervical spine C5—6—7 and often with additional defects in the upper and lower thoracic spine and lower lumbar spine. Quite commonly there is no radiological evidence of osteophytes.

This is a fairly common symptom in general practice. Working in a group practice of 17,000 patients with a special interest in this field, I see a case at least every 2 to 3 weeks. Many of these will resolve with reassurance that there is no serious cause for the symptom, postural advice and exercises. The ones that persist can be consistently relieved by local manipulation of the upper cervical spine. However, this is not something to be attempted without appropriate training in manipulation: I use the disappearance of the sign of local tenderness over the greater cornu of the hyoid bone as evidence that manipulation has been adequately performed.

J.W. Fletcher  
General Practitioner  
Hemel Hempstead, Hertfordshire"

#### From the Journals:

#### **Learned Pain Behaviour** B.M.J. First Leader by S.P. Tyrer, 4 January 1986, Vol 292:1

"Pain is a symptom and does not necessarily indicate physical injury. While the relation between acute pain and tissue damage is close, patients with persistent pain who are referred to doctors often describe more pain than appears warranted from any pathological process that is present. These patients are usually described as suffering from psychogenic or non-organic pain and may be referred for psychiatric or psychological help. Some have clear evidence of psychiatric illness — in particular depression — but in others pain may develop or persist independently of any mental illness."

Patients, according to their personality and environment either take their own measures (analgesics, heat, change of position) against the pain or if they have a solicitous spouse they are inclined not to make light of aches and pains in order to gain attention and sympathy — a syndrome termed 'operant' or 'learned' pain behaviour. The syndrome is often associated with physical injury and not exclusive with non-organic pain. To recognise the syndrome it is necessary to establish the relation between the patients' attitude to their pain and its apparent consequence. Examination of the patient usually reveals a variety of organic and inorganic symptoms but those relatives nearest to the patient should be seen also and the interactions between them and the patient should be considered.

The history they give is likely to contain unusual descriptions (eg. 'whole leg pain' which is 'sickening' or 'blinding'). The severity and extent of the pain is likely to have increased with time and multiple treatments. The facial expressions of pain with grimaces and sighing may be exaggerated, the posture abnormal and the patient often rubs the affected part almost involuntarily. The over-conscientious, those forced into adult responsibilities in childhood or those brought up in a household with a chronically sick relative frequently develop learned pain behaviour. Obviously assessment of the results of examination is difficult; non-dermatomal or myotomal distribution of symptoms may be suggestive but does not exclude organic spinal sources. Excessive guarding and bracing movements too are not always part of an unconscious exaggeration of the picture presented. Simulation and distraction tests may be helpful (Waddell G et al: 'Non-organic physical signs in low back pain'. Spine 1980: 5:117-25).

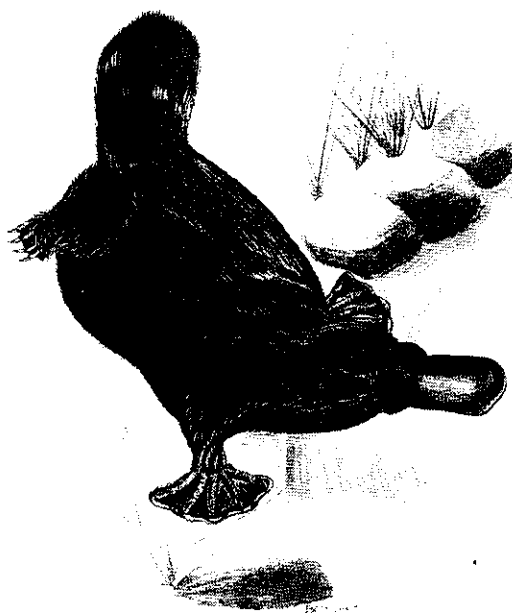
The management consists in the elimination of the rewards (which have been gained by the pain behaviour) and the encouragement of more constructive and active behaviour. The assistance of a psychologist or a behavioural psychiatrist may be sought in addition to explaining the physical sources of the symptoms to the patient and his relatives and in cases of low back ache brief treatment to deal with the likely spine lesions.

Those closest to the patient must bear some responsibility for treatment. Long standing cases may be untreatable and the choice then lies between support (without allowing too much dependence) and abandonment. ■

# Bulletin

## Picture Quiz

What does the creature depicted below have to do with the A.A.M.M.? Select the feature(s) most suggestive of some relationship.



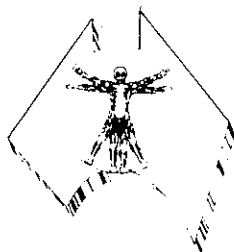
- a) It is an improbable conglomeration of apparently incongruous members somehow acting together to perform feats of extraordinary skill.
- b) It was previously considered by some scientists to be nothing more than a clever fraud and a source of amusement but is now generally accepted as an eccentric expression of the marvellous diversity of nature.
- c) It is extremely reticent, preferring to stay out of sight most of the time and only surfacing on rare occasions for the performance of vital functions (in short, a sort of monotreme submarine).
- d) It is largely unchallenged in its special environment and the few predators that try to compete with it have little impact on its overall success.
- e) It is uniquely Australian but recognised throughout the world as a superb example of the development of a body for specialised purposes.
- f) All of the above

Members are invited to send their responses to the editor. The neatest correct entry will win the prize, generously donated by Ansett, of first class air travel for two from anywhere in Australia to Sydney for the Association's annual conference on 14th — 16th November, 1986. ■

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*See you at . . .*

**THE 16th ANNUAL SCIENTIFIC MEETING  
OF THE  
AUSTRALIAN ASSOCIATION OF MUSCULOSKELETAL MEDICINE**  
at  
**the Schlink Lecture Theatre  
Royal Prince Alfred Hospital, Sydney**  
on  
**13th to 16th November, 1986**

The organising committee has great pleasure in inviting you to Sydney to attend the Association's 16th Annual Scientific Meeting. The 1986 Scientific Programme features notable international and Australian speakers covering a wide number of interesting and controversial topics. Practical workshops will address topics of immediate interest to musculoskeletal clinicians.

