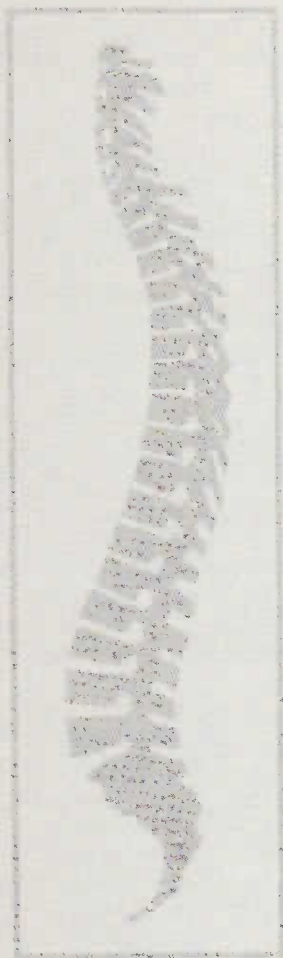


THE CHIROPRACTIC REPORT

An international review of professional and research issues, published bimonthly.

Editor: David Chapman-Smith, LL.B. (Hons.)

May 1989 Vol. 3 No. 4



Professional Notes:

The Patient's Perspective

'Patient Evaluations of Low Back Pain Care From Family Physicians and Chiropractors' Cherkin D.C. and MacCornack, F.A., Western Journal of Medicine (March 1989) 150(3):351-55. **PN1**

We must never be so absorbed with science that we forget to listen to the patient. Cherkin Ph.D and MacCornack Ph.D used a sophisticated survey instrument to compare what the patients of chiropractors and family physicians had to say about their experiences in seeking help for low-back pain.

The study was conducted with patients of a 40 year old health maintenance organization (HMO) in the U.S. state of Washington. The 320,000 persons enrolled in this HMO receive care from a personal family physician assigned from a number of staff physicians, and are entitled to chiropractic care from a DC of choice in the community under a benefit covering chiropractic services.

Two groups of patients were compared. All reported a back problem during a two week period in April 1986 - 359 saw a family physician and a matched group of 348 saw a chiropractor. The results:

- Although similar proportions of patients were "very satisfied" with care for other problems provided by family physicians or chiropractors, back pain patients reported being "very satisfied" three times as often (66% v 22%) after chiropractic care.

continued on page 3.

Chiropractic Management of Disc Problems

A. Introduction

1. Medical management of back pain has not been successful or cost-effective. Internationally the medical profession acknowledges this and is undergoing major changes in understanding and management.^{1,2}

On one hand many MDs retain a traditional view of back pain. This corresponds with the overall medical model of a disease entity. In determining the cause of back pain one looks for an objective lesion that can be pictured on x-ray or other diagnostic image, establishes a physical source of pain, then operates to influence or remove it. Absence of an overt lesion means pain is of psychological origin. This approach is exemplified by this recent advice from Goldberg, a specialist in behavioural medicine, to family physicians:

"The patient and the spouse must realize that there are only three ways to help back pain - surgery, pharmacology, and learning to live with the problem and pain".³

On the other hand an increasing number of prominent medical researchers are adopting a view of chronic back pain similar to the chiropractic model - back pain is most commonly a problem of joint and muscle dysfunction with little overt pathology. To use Kirkaldy-Willis' classification, one is looking for pathophysiology not pathoanatomy.⁴

The routine approach to management should be early active conservative management - manipulation for joint dysfunction, exercise for muscular balance and strength, education concerning the back and lifestyle, together with due recognition of the psychological component. This integrated approach will resolve the great majority of chronic low-back pain syndromes. It will also be highly cost-effective. Only after failure of this approach should there be CT scanning, MRI and other expensive investigations, and the increasingly radical and expensive approaches of steroidal injections, denervation, minor and major surgery.

2. A perfect example of the war going on within medicine is the herniated disc. Here is a nice item of pathology, more visible than ever with the new technology of CT scans and MRI, which can be found in many back pain patients and held responsible. Old habits die hard, and a surgeon faced with chronic back and leg

pain, some neural deficit, and a bulging or herniated disc often cannot resist the temptation to operate.

This temptation is increased by the knowledge that surgery can produce startling immediate relief of pain in such cases. It should be tempered by the fact that usually it does not, and long term results are frequently disappointing.

It should also be tempered by the fact that recent research shows that about 40% of all people over age 40 have disc herniations but are walking around pain-free and healthy.^{5,6} By age 75 that becomes 80%.⁷

3. The chiropractic profession and prominent medical manipulators^{8,9,10,11,12} have long supported manipulation as a safe, effective and cost-effective first line of management for low-back and leg pain associated with most disc herniations. This approach focuses on the dysfunction (pathophysiology) present rather than just the space occupied by the herniated disc (pathoanatomy) and in recent years there has been increasing scientific evidence in support of this approach.

This issue reviews chiropractic management of disc problems - looking at the anatomy of the disc, alternate management approaches, the evidence of effectiveness, and the apparent mechanisms involved.

B. Facts About Discs and the Diagnostic Challenge

4. There is no such thing as a slipped disc - there are, however, floppy discs.

- The disc lies between, and cushions the forces on, adjacent spinal vertebrae (see Fig. 1).

- It comprises an outer layer of tough fibrous tissue (annulus) and, in youth, a watery centre (nucleus). In the young adult the consistency of the nucleus is like toothpaste. The disc is losing capacity to replace and maintain the water content that once made it a firm cushion. By middle age the consistency is dryer again and, depending upon the degree of mechanical wear and tear that life has meted out, may include fibrous or string-like deposits.

- As the nucleus degenerates so does the outer annulus, by a process of internal disruption.

- A combination of the lower fluid content in the nucleus and weakened structure of

the annulus produces the floppy disc – a disc sagging under the pressure of external forces and bulging at the rim. Each of the 23 spinal discs loses height, and this is why you are shorter in old age.

- Disc herniation is the encroachment of the sagging disc on the vertebral canal and spinal cord. This may be contained (where there is protrusion but the outer annulus remains intact) or an uncontained herniation (where the contents of the nucleus completely penetrate the annulus and prolapse into the vertebral canal).

5. The disc, however, is not the only point of contact between each vertebra in the spine. There are three points of contact – central contact at the disc and, towards the back on each side, contact at two facet joints which are intricately paired to allow not only weight bearing but also the three planes of spinal motion – rotation, lateral bending, and flexion (forward) and extension (backward). Loss of height and normal mechanics at the disc inevitably alters the function of the facets. This is why Kirkaldy-Willis, in his highly regarded text 'Managing Low Back Pain'⁴ talks of the 'three joint complex'. The posterior facets are richly innervated with pain sensitive nerve fibers, much more so than the disc which has nerve supply only to the outer third of the annulus.

6. Appreciation that degenerative dysfunction commonly occurs at both the facets and the disc at the same time, and that injury to one results in compensation and injury at the other, leads to the logical conclusion that, in the presence of disc herniation, pain may arise from any of the three elements of the three joint complex. Not yet mentioned are other adjacent tissues, such as the nerve roots. The spine sheaths the central nervous cord. Pairs of spinal nerves exit the spine through space between the vertebrae (the intervertebral foramen). Loss of disc height, as with herniation, compromises the spinal nerve roots. This is not through simple pressure, which causes numbness not pain, but through inflammatory response, mechanical insult, and improper joint function.

7. One begins to see why an exact diagnosis of the source of back pain is complex. Chiropractic practice assumes there are likely several sources of dysfunction in the presence of a herniated disc, not only at the level of the disc problem but also adjacent spinal joints. The above analysis

explains why it is logical to focus on dysfunction, even though it cannot be seen on x-ray or other diagnostic imaging, rather than the herniated disc. It also explains the limitations of:

a) Surgery. If a significant source of pain is the facet joints, surgery to remove the herniated disc contents will be of little help. In fact where the removal of nuclear material further reduces disc height, it can be calculated to aggravate facet dysfunction in the future.

b) Rest and medication. If joint mechanics are faulty this approach merely attacks the symptoms not the cause. There will only be pain relief until the faulty machine is put to work again.

8. Experienced medical manipulators now adopt a similar approach. Bourdillon MD and Day MD write:

"There is no doubt that the symptoms of some patients with actual disc protrusions do improve with manipulative treatment ... It appears that the softening and subsequent protrusion of disc material is a complication of spinal joint dysfunction ... only in some patients does it interfere with recovery enough to justify removal".⁸

C. Chiropractic Management

9. There may be clear contra-indications to any use of manipulative techniques. These include cauda equina syndrome, urinary deficit, and a history of progressive neurological deficit. However the mere presence of sciatic pain and some numbness, foot drop or other deficit to the leg is not a contra-indication. Experienced medical manipulators agree.

10. Two predominant forms of chiropractic management have evolved, often used in combination depending upon the patient. These may be described by examining two recent case reports in the literature.

11. Rotational adjustment

This is the classic form of manipulation used in the presence of disc problems in chiropractic practice. Quon DC et al¹³ describe management of a 30 year old male patient who, following a fall from a tree, had experienced six weeks of stabbing pain in the low-back and left leg when referred to their clinic.

- Prior medical management involved rest, medication and some physical therapy. Pain was unrelieved.

- CT examination revealed "an enormous

central herniation" at L4-L5, "so great that one would not expect a favourable result to conservative measures".

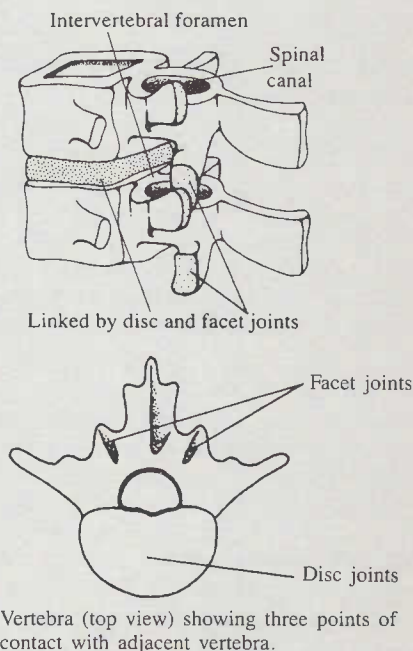
- Because of the general consensus in health care that a trial of conservative treatment is warranted in most cases before surgery¹⁴ the patient was given rotational adjustment or manipulation at L4-L5 daily for two weeks. The principal aim was to correct dysfunction at that level of the spine.

- Within two weeks the patient was pain-free. Management included counselling and continuing education. At four months follow-up the patient remained pain-free.

- Significantly, follow-up CT at four months showed no change in the size or position of the disc herniation. The authors conclude that the pain arose from dysfunction rather than the space occupied by the herniation and that but for their conservative intervention "the patient may well have undergone an unnecessary surgical procedure".

(This case is another illustration of the benefits of medical physicians and chiropractors working together. The clinic involved was a multidisciplinary hospital pain clinic. There can be little doubt that, on Goldberg's analysis (see para 1 of this Report), this patient would have had a disc operation that would have failed to address the wider problem of dysfunction and pain).

Fig. 1
Two vertebrae and intervertebral disc.



Editorial Board. United States: Peter Gale, D.C., Chiropractor, Boston, Massachusetts. Scott Haldeman, D.C., M.D., Ph.D., Neurologist, Santa Ana, California. Reginald Hug, D.C., Chiropractor, Birmingham, Alabama. Dana Lawrence, D.C., Chiropractor, Chicago, Illinois. John M.M. Mennell, M.D., Physical Medicine, Advance, North Carolina. Michael Pedigo, D.C., Chiropractor, San Leandro, California. Louis Sportelli, D.C., Chiropractor, Palmerton, Pennsylvania. Aubrey Swartz, M.D., Orthopaedic Surgeon, Oakland, California. **Canada:** J. David Cassidy, D.C., M.Sc., Chiropractor, Saskatoon, Saskatchewan. Donald J. Henderson, D.C., B.Sc., Chiropractor, Toronto, Ontario. William Kirkaldy-Willis, M.D., F.R.C.S. (C), Orthopaedic Surgeon, Saskatoon, Saskatchewan. **Europe:** Arne Christensen, D.C., F.I.C.C., Chiropractor, Boumemouth, England. **Australia:** Miriam A. Minty, D.C., Chiropractor, Perth, W.A. Lindsay Rowe, B.App.Sc., D.A.C.B.R., Chiropractic Radiologist, Newcastle, New South Wales.

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• Days of disability ("inability to carry out normal activities") during the eight month period between initial visit and survey date was significantly higher for family physician patients (mean 39.7, medium 7) than for chiropractic patients (mean 10.8, medium 0). 48% of family physician patients reported disability for more than a week, 17% of chiropractic patients. (This was particularly noteworthy since the chiropractic patients as a population had a history of more episodes of back pain over a longer term – i.e. they represented a more chronic sample).

• Critics of chiropractic have sometimes suggested that chiropractors over-emphasize spinal manipulation, and create too much patient dependency. This study showed "large and consistent differences between patients of family physicians and patients of chiropractors in their satisfaction with the information they received about their back problem".

Chiropractic patients felt they received more information about the cause of pain, the period of recovery, and how to care for their backs after the visit. Family physician patients were "significantly less likely" to feel they had adequate instruction on exercise, posture and lifting techniques.

• The researchers refer to recent studies confirming that spinal manipulation for back pain provides more immediate relief than other methods with which it has been compared, but conclude that chiropractic management is successful not only because of this form of treatment but because of the greater art with which patients are handled. They recommend that medicine should learn from this.

• An interesting statistic – "in 1980 40% of Americans with chronic back problems sought care for their backs from allopathic and osteopathic physicians, while 30% consulted chiropractors". (Quoting new U.S. Department of Health and Human Services (DHHS) statistics published in September 1986. Publication No. 86-20405 National Center for Health Statistics, Public Health Service, Government Printing Office, pp.17-18).

ABS POINTS

Heard at the Spring Symposium of the American Back Society, Hyatt Regency Hotel, Cambridge, Massachusetts, April 13-16, 1989.

• Our engineering studies show the balance point for vertical load is behind the geometric center of the disc ... there is usually a linear response to load, but 40% of (disc) specimens exhibited buckling when flexion and lateral bending were introduced together.

Buckling can be postulated to lead to disruption of the annular fibers and ultimately herniation.

David Wilder Ph.D., Malcolm Pope, Ph.D., Department of Orthopaedic Surgery, Biomechanics Laboratory, U of Vermont.

• Assumptions for acute back pain patients do not hold true for chronic pain patients. Management has to change completely. One is not simply correcting a lesion with a chronic problem. Adaptive features with chronic pain include:

i) Peripheral nerve injury and repair. During repair

there is sprouting of new nerves very sensitive to noradrenaline and other substances produced by stress. There is transport of abnormal chemicals through abnormal sprouted pathways.

ii) Centrally, pain expands through the sensitivity of more pain receptors, and reduced control by inhibitors.

Scott Haldeman, neurologist, Santa Ana, California.

• Chronic back pain is not all psychological. Two levels of degeneration are:

i) Pathophysiology. These are early changes, dominated by muscle changes, and called by me the 'myofascial cycle'. There is an interrelationship between early degeneration, minor trauma and emotional factors.

ii) Pathoanatomy. The three major physical changes, now supported by the work of many people, are muscle atrophy (capable of repair), fibrosis in muscle (some regeneration possible) and degeneration of facet joints (no regeneration possible).

Joint dysfunction should be treated by manipulation, muscle changes by exercise, and back education has a fundamental role in management.

William Kirkaldy-Willis, orthopaedic surgeon, Saskatoon.

• The patient with joint dysfunction has three sources of difficulty – pain, decreased range of motion, and psychological overlay. Manipulation addresses the first and second through mechanical improvement and reflex inhibition of pain, and the third through the laying on of hands.

David Cassidy, chiropractor, Saskatoon.

• "You, my friends, are in a growth industry. 75% of the U.S. work force sits all day. The work force is more sedentary each year. Back problems are increasing at 14% the rate of population growth".

Why not wait out an episode of back pain rather than seek active treatment? Because waiting costs more. The studies show that waiting for natural remission of an attack of back pain involves on average "\$6,200 in direct and indirect costs".

The work of Urban in England has shown that the inter-vertebral disc loses 25% of its fluid content during the day, and this is replaced at night. Loading must be removed within 6-12 hours or the disc's ability to replace fluid content is permanently impaired. This is why gravity traction is of such value. But the window of opportunity is the first 24-48 hours after onset of symptoms.

Through the application of a few simple principles there can be massive cost saving in the management of low-back pain. "Dr. Kirkaldy-Willis has made sense of it all". Understand the natural history and use early active management – gravity traction, manipulation and exercise. And behind this bring in education.

Charles Burton, neurosurgeon, Minneapolis.

• You throw a baseball or a javelin with abdominal muscles. Throwing strength is trunk strength. Arm injuries are caused by compensation for tired trunk muscles.

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Robert Watkins, orthopaedic surgeon, spinal consultant to the Los Angeles Dodgers, Los Angeles.

• There are two basic principles for prevention of back problems at the work site. Firstly the worker must change postures frequently. Secondly he/she must maintain neutral mechanics in the lumbar spine and sacroiliac joints.

Philip Greenman, doctor of osteopathy, Michigan.

• There are two schools of thought concerning trunk exercises for the prevention and management of back pain – some argue for flexion exercises, some for extension. Ignore the anecdotal and retrospective evidence saying one is better than the other. We have recently completed the first controlled trial. This shows that, with patients experiencing chronic low-back pain (3 months or more) it makes no difference whether you use flexion or extension exercises. Patients in both groups improved significantly with supervised exercise sessions one hour daily for two weeks.

Neil Kahanovitz, orthopaedic surgeon, NYU School of Medicine, New York.

CHIROPRACTIC PERIODICALS AND INDEXES

SCIENTIFIC JOURNALS - GENERAL

AJCM (the American Journal of Chiropractic Medicine)

Indexing: Chiro: CRAC, ICL. *General:* Application pending.

Editorial Board: Multidisciplinary, predominantly North American. *Editor:* Roy W. Hildebrandt, DC

Publisher: Mountain Spring Press Ltd., 24W760 Geneva Road, Carroll Stream, IL 60188. Tel: (312) 653-2246.

Description: Published quarterly in March, June, September and December. First published 1988. Original research, literature reviews, abstracts, commentary. New venture by Dr. Hildebrandt, former editor of JMPT.

Chiropractic (Chiropractic: The Journal of Chiropractic Research Study and Clinical Investigation)

Indexing: Chiro: CRAC, ICL. *General:* None.

Editorial Board: Predominantly chiropractic, United States. *Editor:* Paul Jaskoviak, DC

Publisher: The American Chiropractor Magazine Inc., 3401 Lake Avenue, Fort Wayne, IN 46805. Tel: (219) 423-1432.

Description: Published quarterly in March, June, September and December. First published 1988. Original research, reviews, abstracts, commentary.

Euro J Chiro (European Journal of Chiropractic)

Indexing: Chiro: CRAC, ICL. *General:* None.

Editorial Board: Chiropractic, European *Editor:* Simon Leyson, DC

Publisher: Blackwell Scientific Publications Ltd., P.O. Box 88, Oxford, England for the European Chiropractors' Union.

Description: Published quarterly in March, June, September and December. Published from 1953. Original research, reviews, abstracts, and association updates from individual ECU countries. (A format adopted by most professions and specialties in Europe).

JACA (Journal of the Australian Chiropractors' Association)

Indexing: Chiro: CRAC, ICL. *General:* Australian Medical Index. Further application pending.

Editorial Board: Multidisciplinary, predominantly Australian. *Editors:* Mary Ann Chance, DC, Rolf E. Peters, B.Sc., DC

Publisher: The Australian Chiropractors' Association, P.O. Box 748, Wagga Wagga 2650, Australia. Tel: 69-21-3238.

Description: Published quarterly in March, June, September and December. Published from 1971. Original research, reviews, abstracts, commentary. "Dedicated to the advancement of chiropractic principles and practice and cultivating inter-professional dialogue". (Association news published separately in ACA News).

JCCA (Journal of the Canadian Chiropractic Association)

Indexing: Chiro: CRAC, ICL. *General:* Application pending.

Editorial Board: Multidisciplinary, predominantly Canadian. *Editor:* Allan Gotlib, B.Sc., DC

Publisher: Canadian Chiropractic Association, 1396 Eglinton Avenue West, Toronto Ontario M6C 2E4, Tel: (416) 781-5656.

Description: Published quarterly in March, June, September and December. Published from 1957, formerly entitled The Canadian Chiropractic Association Journal. Equivalent quality, content and purpose as JACA (above). (Association news published separately in CCA News).

Description: Published quarterly in autumn, winter, spring and summer. Published from 1984. Original research, abstracts and recurring bibliography.

SCIENTIFIC JOURNALS - SPECIAL INTEREST

CRJ (Chiropractic Research Journal)

Indexing: Chiro: CRAC, ICL. *General:* None.

Editorial Board: Predominantly chiropractic and Georgia, USA. *Editor:* John D. Grostic, DC

Publisher: Sid E. Williams Research Center, Life Chiropractic College, 1269 Barclay Circle, Marietta, GA 30060. Tel: (404) 424-0554.

Description: Published quarterly. First published in 1988. "Dedicated to basic and clinical subluxation related research".

JMPT (Journal of Manipulative and Physiological Therapeutics)

Indexing: Chiro: CRAC, ICL. *General:* Current Contents, Index Medicus, BIOSIS, USSR Academy of Sciences, EXCERPTA MEDICA.

Editorial Board: Multidisciplinary, international. *Editor:* Dana Lawrence, DC

Publisher: Williams and Wilkins, 428 East Preston Street, Baltimore, MD 21202. Tel: (301) 528-4000 or toll free (800) 638-6423. For the National College of Chiropractic, Lombard, IL.

Description: Published bi-monthly (6 times annually) with first issue in February. Published from 1978. Presently the leading scientific journal of the chiropractic profession. Original research, literature reviews, abstracts, commentary. Research Forum (Research Forum: The Journal of Chiropractic Research)

Indexing: None.

Editorial Board: Predominantly chiropractic and North American. *Editor:* Robert J. Wagnon, Ph.D.

Publisher: Palmer College of Chiropractic, 1000 Brady Street, Davenport, IA 52803, Tel: (319) 326-9662.

Chiropractic History

Indexing: Chiro: CRAC, ICL. *General:* Index Medicus, Bibliography Hist. Medicine (US National Library of Medicine).

Editorial Board: Predominantly chiropractic and North American. *Editor:* Russell W. Gibbons

Publisher: Association for the History of Chiropractic, 4920 Frankford Avenue, Baltimore, MD 21206. Tel: (301) 488-6604.

Description: Published twice annually in July and December. Published since 1981. As title implies, devoted to chiropractic history. Mr. Russell Gibbons, editor, is a noted author and journalist from Pittsburgh, PA.

Chiropractic Sports Medicine

Indexing: Chiro: CRAC, ICL. *General:* Index Medicus

Editorial Board: Interdisciplinary, predominantly North American. *Editor:* Robert H. Hazel, Jr., DC

Publisher: Williams and Wilkins, 428 East Preston Street, Baltimore, MD 21202. Tel: (800) 638-6423 or (301) 528-4000.

Description: Published quarterly in January, April, July and October. Published from 1987. Leading chiropractic journal on sports related issues. Research, abstracts, reviews, commentary, together with news concerning the Federation Internationale de Chiropratique Sportive (FICS) and other sports chiropractic agencies.

Chiropractic Technique

Indexing: None.

Editorial Board: Predominantly chiropractic and North American. *Editor:* Thomas Bergemann, DC

Publisher: Williams and Wilkins, 428 East Preston Street, Baltimore, MD 21202. Tel: (800) 638-6423 or (301) 528-4000.

Description: Published quarterly in March, June, September and December. New. First issue just appearing, dedicated to publishing quality research and commentary related to chiropractic technique.

Journal of Chiropractic Education

Indexing: Chiro: CRAC, ICL. *General:* None.

Editorial Board: None. *Editor:* Grace E. Jacobs, D.A.

Publisher: Dr. Grace Jacobs, 3441 Highlander Drive, St. Paul, MN 55122. Tel: (612) 452-6797.

Description: Published quarterly since 1987 by Dr. Jacobs, who holds a doctoral degree in education, currently Director of Research, Northwestern Chiropractic College. A forum for the open and responsible discussion of topics relevant to chiropractic education.

RESEARCH INDEXES

CRAC (Chiropractic Research Archives Collection)

Publisher: Canadian Memorial Chiropractic College, 1900 Bayview Avenue, Toronto Ontario, Canada M4G 3E6, Tel: (416) 482-2340.

Description: The best reference source for chiropractic literature. A cumulative work currently comprising 5,000 abstracts of chiropractic and related bio-medical research. Abstracts. Author and subject indexes.

ICL (Index to Chiropractic Literature)

Publisher: CLIBCON (Chiropractic Libraries Consortium) c/o Western States Chiropractic College, 2900 N.E. 132nd

Avenue, Portland, OR 97230, Tel: (503) 256-3180.

ICL editor: Ms. Kay Irvine, Director of Library Services, WSCC.

Description: Author and subject indexes of research published in the chiropractic literature. Index only - no abstracts. CLIBCON is an organization comprising library directors at all major chiropractic colleges worldwide.

SCIENTIFIC - NEWSLETTERS AND REVIEWS

The Chiropractic Report

The publication you are reading. See pp.2 and 6 for editorial and subscription information.

Spinal Manipulation

Publisher: Foundation for Chiropractic Education and Research, 1701 Clarendon Blvd., Arlington, VA 22209 Tel: (703) 276-7445.

Description: Published quarterly in January, April, July and October, since 1986. Edited by Scott D. Banks, DC and John C. Willis, DC FACO. Review of current literature in chiropractic and other bio-medical journals. Abstracts listed under subject headings, together with editorial comment on each abstract.

GENERAL JOURNALS - ASSOCIATIONS AND COLLEGES

Association and college journals that are essentially serious research publications are listed above under 'Scientific Journals - General'. Those below contain significant case reports and clinical research but have a major emphasis on general news and commentary. All are indexed in the chiropractic indexes CRAC and ICL.

ACA Journal of Chiropractic

Published monthly by the American Chiropractic Association, available on subscription to non-members. Contact: Journal of Chiropractic, 8229 Maryland Avenue, St. Louis, MO 63105 Tel: (314) 862-7800.

California Chiropractic Journal

Published monthly by the California Chiropractic Foundation, an affiliate of the California Chiropractic Association. The leading US state association chiropractic journal, available on subscription to non-members. Contact: CCF, 1700 Alhambra Blvd., Suite 110, Sacramento CA 95816, Tel: (916) 457-5202.

ICA Review (International Review of Chiropractic)

Published bi-monthly (6 times annually) by the International Chiropractors Association, available on subscription. Contact: ICA, 1110 North Glebe Road, Suite 1000, Arlington VA 22201, Tel: (703) 528-5000.

Today's Chiropractic

Published bi-monthly (6 times annually) by the Life Chiropractic College, available on subscription. Contact: LCC, 1269 Barclay Circle, Marietta GA 30060, Tel: (404) 424-0554.

GENERAL PUBLICATIONS

The American Chiropractor

Publisher: The American Chiropractor Magazine Inc., affiliate of Busch Publishing Co., 5005 Riviera Court, Fort Wayne, IN 46825, Tel: (219) 484-9600.

Description: Published monthly, magazine format.

The Chiropractic Journal

Publisher: The Chiropractic Journal, 2950 North Dobson Road, Suite 1, Chandler AZ 85224, Tel: (602) 898-7045.

Description: Published monthly. Distributed free to all DCs and students in the United States. Newspaper format, presents conservative or straight chiropractic viewpoint.

The Digest of Chiropractic Economics

Publisher: Chiropractic News Publishing Co., 29229 West Six Mile Road, Livonia, MI 48152-3661, Tel: (313) 427-5720.

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Dynamic Chiropractic

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Description: Newspaper Format. Distributed free to all DC's.

12. Flexion-Distract Manipulation

Cox DC, who has made a major contribution in this field, describes the case of a 36 year old male truck driver:¹⁵

- The patient experienced low-back and left leg pain following an injury while driving. Initial management was medical, comprising negative x-rays followed by three weeks of physical therapy. When this proved ineffective there was referral to an orthopaedic surgeon, hospitalization for a CT examination which revealed herniation at L4-L5, epidural steroid injections which gave temporary pain relief for three days, then subsequently a negative bone scan. With the patient unimproved and now off work over three months, his employer initiated chiropractic management.

- The chiropractic diagnosis was L5-S1 left extreme lateral disc prolapse, and facet syndrome at L5-S1.
- Management comprised flexion-distract (a precise form of traction with the patient lying face down on a cushioned table with various adjustable sections – the traction forces come from the table and manual contacts by the chiropractor) followed by physical therapy (positive galvanism, tetanizing current and alternating hot and cold packs).

Treatment was twice daily for one week, then twice weekly for five weeks. Nautilus back exercises were prescribed and performed from the third week of care.

- At the end of six weeks the patient returned to full work duties as a truck driver. He had full range of motion restored in the thoracolumbar spine and was pain-free.
- Cox reports that his treatment protocol requires a 50% improvement in subjective and objective signs within 3-4 weeks. Given such improvements, the same management approach should be pursued for up to another two months maximum.
- He refers to his previous study of 100 consecutive cases which revealed a median treatment period of 26 days, comprising 11.2 treatments.
- Cox concludes that the extensive medical diagnostic testing in this case (which included myelography) did not influence his treatment program, and that there is a clear case for considering flexion-distract manipulation before commencing expensive investigations. (Some patients will require traction in extension).
- The principal aim of this management approach, using selective traction, is to shift or reduce the disc herniation – through a combination of increased width in the joint, tightening of the posterior longitudinal ligament to exert force on a central protrusion, and creation of a sub-atmospheric pressure as the bones move apart.

13. Rehabilitation

Is there a role for chiropractors where surgery is indicated? This question was addressed recently by Dr. Frank Cortica, a chiropractor from Westchester New York, speaking at the Spring Symposium (April 13-16, 1989) of the American Back Society in Boston.

Dr. Cortica, a member of the postgraduate faculty of the New York Chiropractic College, described three recent cases in his practice. In each history and findings on examination led him to order MRI studies which confirmed disc herniations requiring referral for surgery.

The third case, involved a 28 year old photographer who had failed to respond to conservative medical then chiropractic care. Cortica had only achieved temporary relief of back, left buttock and left leg pain through chiropractic adjustment and axial traction. MRI revealed a congenital narrow spinal canal (stenosis) and a large disc herniation at L4-L5. The patient

was referred for surgery, a discectomy in which a large amount of nuclear material was removed.

This produced significant but not complete pain relief. The patient was referred back to chiropractic management. A rehabilitation program comprising further spinal adjustment and traction, together with an exercise program and education, led to full recovery.

D. Evidence of Effectiveness

14. There is now quite satisfactory evidence of the effectiveness of manipulation in the management of patients with documented disc problems – not only anecdotal case reports (as above) and the writings of chiropractic and medical⁸⁻¹² authors based on extensive clinical experience, but also controlled studies.

15. The first study, by Mensor MD and published in 1955,¹⁶ was an analysis of 205 patients with a clinical diagnosis of ruptured intervertebral disc. Usual conservative treatment at that time comprised the four main components of rest, support, rehabilitation exercises (with or without physical therapy), and time. To these Mensor added rotational lumbar manipulation.

An earlier study by Colonna and Friedenbergl concluded that only 29% of patients with disc rupture became pain-free following standard conservative treatment. Using this as his comparison, Mensor reports prompt and satisfactory relief with 64% of patients in his private practice where manipulation was added as part of the conservative management.

16. Chrisman MD et al¹⁷ report from Massachusetts in 1964 on a population on 61 patients.

- The patients had experienced chronic low-back pain and sciatic leg pain for a period of years and had an "unequivocal picture of ruptured intervertebral disc unrelieved by conservative care".

- 39 consecutive patients who had not responded to this conservative care (comprising heat, analgesics, muscle relaxants, traction, back supports, flexion exercises and bed rest) were given lumbar rotational manipulation.

A control group of 22 patients remained under normal conservative care without manipulation.

- On initial assessment after 2-4 days 20 (51%) of the patients in the manipulation group had either excellent (completely relieved) or good (occasional back or extremity pain but no restrictions in physical activity) results. These results were maintained at follow-up after three years.

- The control group, by comparison, "did poorly" and 16 (73%) proceeded to surgery. Final results are not given.

- The researchers note that, notwithstanding the improvement in symptoms, the appearance of patients' myelograms was not altered before and after manipulation.

17. The most recent report, by Nwuga Ph.D in 1982,¹⁸ has superior design and was a properly controlled study to compare the relative efficacy of conventional conservative medical care and manipulation in the management of patients with disc herniation and back and leg pain.

The trial population comprised 51 consecutive patients with disc protrusion confirmed by myelography and electrodiagnosis. All were experiencing back pain and pain and/or numbness to the leg arising from reflex changes apparently associated with root compression.

- The study group of 25 received rotational lumbar manipulation and back education 3 times weekly for 4 weeks. The comparison group of 26 received conventional physical therapy department care (diathermy (heat), exercises, and back education) at the same frequency over the same period of time.

- Pre and post (at six weeks) treatment measurements were

made for various ranges of lumbar spinal motion (flexion and extension, total side flexion, total lumbar rotation) and straight leg raising.

• Prior to treatment there was no significant difference between the two patient groups on any of these parameters. Following treatment those receiving manipulation showed a statistically significant improvement on all measures compared with those receiving conventional medical therapy. It was concluded that manipulation was the superior treatment.

E. Mechanisms

18. Nwuga addresses the question of why manipulation proved successful in his trial. He refers to three possible explanations. Manipulation:

- i) Causes a centripetal pressure on the herniated disc material thereby altering its position;
- ii) Produces movement at the facets, relieving pain from that source; and
- iii) Provides input to functional reflexes, modifying pain.

He briefly reviews both chiropractic and medical literature in support of these views, but concludes that the mechanisms of relief remain unclear.

19. The two major schools of thought, each of which has supporters in chiropractic and medicine, may be summarized as:

a) **Influencing a space occupying lesion.** This analysis focuses on the abnormal position of the contained or uncontained disc herniation, symptoms arising from continued pressure on the nerve root, and the forces whereby manipulation can alter the position of the discal material bringing relief from pain.

b) **Correcting dysfunction.** Adherents to this approach doubt the ability of manipulation to alter significantly the position

of the herniated disc, see most disc herniations in themselves as essentially benign, and focus on correction of altered mechanics in the spinal joint. The disc is only one source of dysfunction. Concurrent degeneration at the facet joints may be more important.

20. A number of factors suggest the latter view may prove to be right:

• The herniated contents of a disc are of a consistency unlikely to be moved with the type of forces generated by manipulation. With a contained herniation, even if the disc moves towards its normal position following treatment presumably it would protrude again when normal weight bearing and activity were resumed. With an uncontained herniation, nothing has been done to strengthen or heal the breach in the annulus. Toothpaste returned to a tube without a cap moves out again when the tube is squeezed.

• Modern imaging, as in the Quon case report, is showing no alteration in the disc herniation after treatment despite clinical success.

• Chrisman et al¹⁷ report live evidence. During several disc operations they performed side rotatory lumbar manipulations to watch the effect on the tissues. Their report:

"Neither the nerve root nor the disc protrusion moved perceptibly, but the laminae moved apart by as much as 5mm, markedly stretching the lower fibres of the ligamentum flavum and the superior lateral joint capsule".

Strong movement at the facets, none at the disc.

F. Conclusion

21. In one of the most famous research reports in the field of low-back pain Mixter and Barr described herniation of the lumbar intervertebral disc as a cause of low-back pain with sciatic radiation in 1934.¹⁹ This produced a wave of enthusiasm for back surgery. FBSS (failed back surgery syndrome) has been the most common result. Recent evidence has shown that more than 50% of patients with sciatica will be greatly improved with conservative care,²⁰ and that even where there are good, early surgical results over the long term patients do not do significantly better than when treated conservatively with bed rest, exercise, and back school.²¹

Thus, although surgery has a rightful place, it is now rarely performed without an adequate trial of conservative therapy.

22. This report has focused on the contribution to the conservative management of disc problems that can be made from a chiropractic perspective, now well-substantiated by research. This is that the disc may not be the source of the problem at all, or alternatively only part of it. Skilled manipulation to restore joint function has been shown in a controlled study to be more effective than conventional conservative medical care and, in the words of Maigne MD an experienced medical manipulator from France, should have "a privileged position" in the mechanical treatment of disc protrusion and sciatica.¹¹

23. Some patients do not respond to manipulation, and in chiropractic practice it is not always possible to determine this in advance. In these circumstances failure to respond can be treated as diagnostic. There is no significant risk rate, as all published medical manipulators agree. Lewit, a neurologist from Prague respected by chiropractic and medical professions for his clinical experience and research in the field of spinal manipulation, provides a balanced assessment in saying:

"In disc prolapse concomitant blockage (i.e. subluxation or dysfunction) may cause the patient's condition to deteriorate considerably, so that after treatment of the blockage the clinical condition may be greatly improved. To what extent this can happen cannot be easily foretold, but it is always worth trying provided we use the right technique".¹⁰

References see page 3.

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