What is Chiropractic?

Chiropractic today is one of the largest primary-contact health care professions in Canada with over 6,000 practicing chiropractors. Approximately four and a half million Canadians use the services of a chiropractor each year[1].

Chiropractic is a regulated health profession recognized by statute in all Canadian provinces and American states. The benefits of chiropractic care are well recognized by other health care practitioners. In a 1995 survey, 44 per cent of Ontario and Alberta physicians indicated that they refer patients for chiropractic treatment[2].

Natural, non-invasive approach to health care

Chiropractors practice a drug-free, manual approach to health care that includes patient assessment, diagnosis and treatment. In particular, chiropractors assess patients for disorders related to the spine, pelvis, extremity joints, and their effect on the nervous system. As a result of taking a physical assessment and patient history, chiropractors are able to provide a differential diagnosis for the patient's presenting condition(s) and develop a comprehensive treatment/management plan. Chiropractors are also trained to recommend therapeutic exercise, to utilize other non-invasive therapies, as well as to provide nutritional, dietary and lifestyle counselling [3-6].

Chiropractic adjustment is the most common form of treatment utilized by chiropractors in clinical practice. Also known as spinal manipulative therapy, adjustment is a non-invasive, manual procedure that utilizes the highly refined skills developed through four years of intensive chiropractic education. Adjustment is a carefully controlled procedure delivered by a skilled practitioner to dysfunctional spinal or extremity joints. The primary goal is to decrease pain[7,9], improve areas of reduced movement in the joints and supporting tissues, particularly of the spine[7,9,10,11], and decrease muscle tightness or spasm[7,11,12] through the restoration of normal mechanics and improved functioning of the spine, extremities and supporting soft tissue structures[10,11,13]

Adjustment rarely causes discomfort. However, as it is a manually applied therapy, patients may sometimes experience mild soreness or aching following treatment which usually resolves within 12 to 48 hours.

The chiropractor adapts the procedure to meet the specific needs of each patient. For example, the technique is modified when treating children, pregnant women and older patients. Patients typically note positive changes in their symptoms immediately following treatment. The vast majority of patients who seek chiropractic health care do so for complaints of the musculoskeletal system, most often for conditions affecting the spine such as low back pain, neck pain and headaches[3,4,14], and research studies have demonstrated that chiropractic treatment is effective for these conditions[7,8,11,13]

Legislative bodies across Canada, as well as researchers and governments around the world have conducted extensive reviews of the chiropractic profession and have consistently endorsed chiropractic services[3, 15-23].

Primary & complementary care

In many cases, such as lower back pain, chiropractic care may be the primary method of treatment. Where other medical conditions exist, chiropractic care may complement or support medical treatment by relieving the musculoskeletal aspects associated with the condition.

Chiropractic care may also be palliative, providing symptomatic relief to patients with chronic conditions. By treating the musculoskeletal elements of such disorders, chiropractic treatment may improve the general well-being of the patient. In this regard, Canada's chiropractors are able to provide complementary care as one element of a patient's overall treatment program.

For example, the Canadian Memorial Chiropractic College (CMCC) in Toronto has developed a number of external clinics in traditional health care centres in order to provide complementary care through chiropractic treatment. CMCC's teaching clinics are located at the following external centres: Sherbourne Health Centre, South Riverdale Community Health Centre, Muki Baum Adults' and Children's Centres, Anishnawbe Health Toronto, St. John's Rehabilitation Hospital and West Park Healthcare Centre.

Regulation & standards

Chiropractic is regulated by provincial statute in all provinces. Chiropractors along with medical doctors, dentists, psychologists, and optometrists have the legislated right and obligation to communicate a diagnosis and to use the title doctor. Each province has a regulatory college established by legislation in the same manner, and with the same structure and similar regulations, as the regulatory bodies for other health care professions. The regulatory colleges are responsible for protecting the public, standards of practice, disciplinary issues, quality assurance and maintenance of competency.

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Chiropractic Education

Chiropractic education in Canada is offered at the Canadian Memorial Chiropractic College (CMCC) in Toronto, and at l'Université du Québec à Trois-Rivières (UQTR). Both programs are fully accredited by the Council on Chiropractic Education of Canada that has adopted standards similar to those of the Council on Chiropractic Education in the United States which is, in turn, recognized by the United States Department of Education.

Seven years university-level education

Chiropractic students undergo a rigorous course of study similar to that of other health care professionals. Entrance requirements are also similar. Students are required to complete a minimum of three years of university before they are eligible for admission to the CMCC accredited program. Approximately 90 per cent of students entering the CMCC program have completed a baccalaureate or graduate degree.

The CMCC program requires four years of full-time study, including a 12-month internship in the College's clinics. In Quebec, the UQTR has a five-year program following graduation from CÉGEP.

Multi-disciplinary faculty

In addition to the academic program, chiropractic education requires hands-on clinical experience under the supervision of highly-qualified chiropractic faculty. This experience includes clinical assessment, diagnosis, treatment, and referral protocols. The faculty at both CMCC and UQTR have diverse backgrounds and offer students a wide range of expertise. Faculty come from such disciplines as biological sciences, pathology, medicine and psychology, as well as chiropractic.

Both the CMCC and the UQTR programs include courses in anatomy, biochemistry, physiology, neurology, embryology, principles of chiropractic, radiology, immunology, microbiology, pathology, nutrition, and clinical sciences specifically relating to diagnosis.

In particular, chiropractors receive training in radiology that covers a range of topics from radiation biophysics and protection to clinical X-ray interpretation and diagnosis. Radiology training consists of more than 360 contact hours followed by application during clinical internship.

CMCC and UQTR have also developed relationships – both formal and informal – with other universities in Canada. For example, faculty and students of CMCC are currently conducting research with fellow scientists at the University of Alberta, University of Calgary, University of Saskatchewan, University of Toronto and Ryerson University. UQTR has collaborations with l'Université du Québec à Montréal and Laval University.

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Chiropractic Research

The history and development of chiropractic, in many ways, mirrors the advancement of the medical profession over the past century. During the late 1800s, the concept of "spinal irritation" was popular in medical circles and the practice of chiropractic was consistent with many aspects of scientific thought at the time. These theories seem quaint today, but as science advanced, so did our understanding of the neurological and biomechanical principles that underlie the effectiveness of chiropractic treatment. Today, these evidence-based principles form the foundation of chiropractic education.

Consortium of University-Based Research Centres

The Consortium of Canadian Chiropractic Research Centres (CCCRC), established in 1998 by The Canadian Chiropractic Association (The CCA) represents research collaborations with many universities and institutions across the country, such as the Canadian Memorial Chiropractic College, Université du Québec à Trois-Rivières, and the Institute for Work and Health. The CCCRC currently comprises 12 university-based research sites where chiropractic researchers either hold faculty appointments or are taking advanced research training. The CCCRC facilitates inter-disciplinary research and has sponsored four significant research symposia since its inception.

International Collaboration

The Canadian Chiropractic Association is an affiliate member of the Canadian Cochrane Network and Centre and a representative of the chiropractic profession serves on the Executive Committee of the Network. The Cochrane Collaboration, established in the United Kingdom in 1993, is an international organization whose mission is to prepare, maintain and promote the accessibility of systematic reviews of the effects of health care interventions.

The CCA also participates in international projects such as the Leboeuf-Yde study, a multi-nation research study headquartered in Denmark, to investigate the non-musculoskeletal effects of chiropractic care. Researchers are also involved in the *Bone and Joint Decade Task Force on Neck Pain and Its Associated Disorders* which is conducting five multi-disciplinary, international studies.

The Canadian Memorial Chiropractic College

The Canadian Memorial Chiropractic College (CMCC) has been recognized as an international leader in chiropractic research for more than five decades. Over the years, members of CMCC's faculty have developed collaborative research relationships with faculty at many academic institutions in North America. The profession also participates in inter-professional health policy development. An example of this is the 2003 award of almost $2 million by the Ontario Ministry of Health and Long-Term Care to faculty at CMCC for a primary care project to develop a model of collaborative, inter-disciplinary practice.

World Class Research

The profession's researchers are funded by many premier agencies such as the Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, Health Canada, Ontario Ministry of Health and Long-Term Care, Industry Canada, Alberta Provincial CIHR Training Program in Bone and Joint Health, and the Canada Primary Care Transition Fund to name a few. The profession's researchers undertake broad-based, substantive research in biomedical and clinical sciences, health systems and services, and in social cultural areas, and they are widely published in both chiropractic and non-chiropractic peer-reviewed journals. Some of these journals include the *New England Journal of Medicine, the Lancet, Annals of Internal Medicine, Arthritis and Rheumatism, British Medical Journal, Canadian Medical Association Journal, Spine, Archives of Physical Medicine and Rehabilitation, the Clinical Journal of Pain, the Journal of the Canadian Chiropractic Association and the Journal of Manipulative and Physiological Therapeutics.*

Canadian Institutes for Health Research Partnership

In 1998, the Canadian Institutes for Health Research (CIHR) – formerly the Medical Research Council – partnered with The Canadian Chiropractic Association on a dollar for dollar basis to fund young researchers. Since that time, The CCA has supported a doctoral award, three fellowship awards and two research chair awards. In the same year, the CIHR partnered with the Canadian Memorial Chiropractic College to offer two doctoral research awards for faculty. Similarly, the Fondation chiropratique du Québec has partnered with CIHR to fund a fellowship award.

The training of chiropractic researchers through sponsored PhD programs will enable the profession to further develop the research leadership to ensure continued research into chiropractic health care. A national community of fulltime research scholars in chiropractic will ensure that Canadians benefit from high quality, evidence-based care.

Chiropractic Research Agenda

In 2000, The Canadian Chiropractic Association began a complex process to establish an approved research agenda in Canada. This process is funded in part by four CIHR Institutes: the Institute of Musculoskeletal Health and Arthritis, Institute of Aging, Institute of Neuroscience, Mental Health and Addiction, and Institute of Population and Public Health.

University Chairs in Chiropractic

The chiropractic profession has also established a university Research Chair program jointly funded with CIHR. Dr. Greg Kawchuk was the first member of the profession to be awarded a university-based Chiropractic Research Chair and was appointed to the faculty of the University of Calgary for a five-year period. Dr. Kawchuk is studying vertebral artery conditions in animal models. He is also a member of the CIHR Peer Review Committee on Movement and Exercise.

Dr. Mark Erwin was awarded the profession's second Research Chair in 2003. He is set to take-up the award at the University of Toronto where he will be investigating degenerative disc disease, the most common cause of lower back pain and associated disability.

Drs. Kawchuk and Erwin are the first participants in the university-based Research Chair program that will significantly build the profession's intellectual research capacity and help Canadians live healthier lives.

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Effectiveness of Chiropractic Treatment

Over the years, chiropractic has undergone rigorous evaluation from researchers within the profession itself, and from the legislative, health care and scientific communities which has resulted in a significant body of evidence around the efficacy of chiropractic care for musculoskeletal disorders such as back pain, neck pain and headache.

Cost Effective Health Care

Numerous governments have evaluated the effectiveness of chiropractic care both from a public funding perspective and in terms of establishing clinical guidelines for the management of back pain. One of the most thorough analyses of the scientific literature on chiropractic treatment of low back pain was conducted in 1993 by health economists at the University of Ottawa under the direction of principal author Pran Manga, Director of the Master in Health Administration program at the university[1].

This report concluded that spinal adjustment applied by chiropractors is more effective than alternate treatments for lower back pain, and that there would be significant cost-saving to the health care system if more management of lower back pain was transferred from physicians to chiropractors.

The 1994 Ontario Chiropractic Services Review (The Wells Report)[2], chaired by former Minister of Health Tom Wells, made recommendations on many aspects of the delivery and funding of chiropractic services in Ontario. The report concluded that on the grounds of effectiveness, safety, patient satisfaction and public acceptance of chiropractic services, particularly in the management of musculoskeletal disorders, chiropractic services should continue to be funded by the Ontario Health Insurance Plan.

International Studies Agree

In addition to Canadian studies, there have been a number of international reports. One of the most significant reports was produced by the Clinical Standards Advisory Group (CSAG) in the UK in 1994. The CSAG guidelines for the management of back pain[4] recommends adjustment along with active exercise and physical activity to modify pain mechanisms and speed recovery.

The 1997 New Zealand Acute Low Back Pain Guide[5] is a government sponsored, evidence-based guideline based on an extensive review of the international literature and wide consultation with professional groups in New Zealand. The New Zealand guideline reinforced the CSAG recommendations by including adjustment as an appropriate treatment for pain relief and improvement in mobility and function for acute low back pain.

Similarly, the Royal College of General Practitioners (RCGP) in the UK produced Clinical Guidelines for the Management of Acute Low Back Pain in 1999[6]. The guidelines state that there is strong evidence that adjustment can provide short-term improvement in pain and activity levels and demonstrates higher patient satisfaction than alternate treatments. The guidelines recommend that adjustment be considered for pain relief and for patients who are failing to return to normal activities.

In 2001, the RCGP published an updated review of the evidence-base for their clinical guidelines. No changes were made to the above recommendations for the clinical use of adjustment in the management of acute low back pain.

The Danish Institute for Higher Technology Assessment (DIHTA) produced a report in 1999 on frequency, management and prevention of low back pain[7]. DIHTA states that adjustment is indicated for management of acute pain and to improve function, and should be considered for use in patients who have been experiencing pain for longer than two to three days. DIHTA also recommends that manipulation be considered for recurrent, chronic low back pain and for nerve root/disc conditions.

The Ontario Workplace Safety and Insurance Board guidelines for the treatment of chronic pain, published in *The Clinical Journal of Pain*[8] supplement in December 2001, state that adjustment is more effective for chronic low back pain than usual care by a general practitioner, bed rest, analgesics or massage in the short to intermediate term.

Studies in other countries have reached similar conclusions and the international medical literature contains a broad range of published studies attesting to the effectiveness and safety of chiropractic care for musculoskeletal complaints including back pain, neck pain and headaches[9-45].

Research is also ongoing into the ancillary benefits of chiropractic adjustment that are frequently seen in clinical practice. For example, a research report published in 1999 in the *Journal of Manipulative Physiologics and Therapeutics* concluded that "spinal adjustment is effective in relieving infantile colic"[46]. The study was a randomized, controlled clinical trial with a blinded observer and compared the effect of chiropractic treatment with a commonly prescribed medication used to relieve infantile colic. It resulted in chiropractic care being recommended for treatment of colic in Denmark.

Similarly, a 2003 U.S. study concluded that the application of adjustment techniques in children with recurring ear infections can prevent or decrease surgical intervention or antibiotic overuse[47].

As research advances, evidence continues to accumulate to support the benefits of chiropractic care for a variety of conditions.

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Frequently Asked Questions About Chiropractic

Does chiropractic treatment require a referral from a MD?

No. A patient does not have to be referred. Chiropractors are legislated as primary contact health care professionals in every province in Canada. This means that patients can consult them directly. However, chiropractors often work closely with MDs, 44 per cent of whom refer their patients to chiropractors when they believe chiropractic treatment will help alleviate a patient's condition[1]. Similarly, chiropractors frequently refer to medical doctors when necessary.

How is chiropractic adjustment performed?

Chiropractic adjustment or manipulation is a manual procedure that utilizes the highly refined skills developed during four intensive years of chiropractic education. The chiropractor typically uses his/her hands to manipulate the joints of the body, particularly the spine, in order to reduce pain, and restore or enhance joint functioning.

Chiropractic manipulation is a highly controlled procedure that rarely causes discomfort. The chiropractor adapts the procedure to meet the specific needs of each patient. Patients often note positive changes in their symptoms immediately following treatment.

Can chiropractic treatment cure colds, earaches and other ailments?

Chiropractic care cannot "cure" these conditions, but there is some evidence to indicate that adjustment may have a beneficial effect on a variety of conditions. Adjustment may alleviate some of the secondary, or referred pain, arising from the response of the musculoskeletal structures to the primary cause. For example, research conducted in Denmark resulted in chiropractic treatment being recommended for the relief of infantile colic[2]. Similarly, a recent U.S. study concluded that the application of manipulative techniques in children with recurring ear infections can prevent or decrease surgical intervention or antibiotic overuse[3].

Is chiropractic adjustment a safe procedure?

Chiropractic adjustment or manipulation is a drug-free, non-invasive approach to common musculoskeletal conditions such as headache, neck and back pain. As such, it is a low risk therapy. Complications arising from adjustment are rare.

Is chiropractic treatment appropriate for children?

Yes, children may benefit from chiropractic care. Children are very physically active and experience many types of falls and blows from activities of daily living as well as from participating in sports. Injuries such as these may cause many symptoms including back and neck pain, stiffness, soreness or discomfort. Chiropractic care is always adapted to the individual patient. It is a highly skilled treatment, and in the case of children, very gentle.

While there is some clinical evidence that musculoskeletal treatment of infants may have positive effects, well-controlled studies are required to verify the benefits that are seen in clinical practice.

Does chiropractic treatment require X-rays?

X-rays can play an important role in diagnosis and are taken when a need has been determined after taking a patient case history and conducting a physical examination. Chiropractors receive 360 hours of education in radiology covering a full range of topics from protection to X-ray interpretation and diagnosis. Governments in every province have recognized the training and competence of chiropractors to take and interpret X-rays and have granted them this right.

Can chiropractic treatment provide a preventive function?

Clinical experience suggests that individuals with chronic conditions such as degenerative joint disease (osteoarthritis) or recurrent neck pain, back pain or headaches may experience less frequent and less severe symptoms when under regular chiropractic care. This also applies to individuals in highly stressful situations and those who experience repetitive physical and postural strain from their daily activities. Whether ongoing chiropractic treatment can prevent back pain from occurring in the first place, or prevent a previous condition from re-occurring, requires further study.

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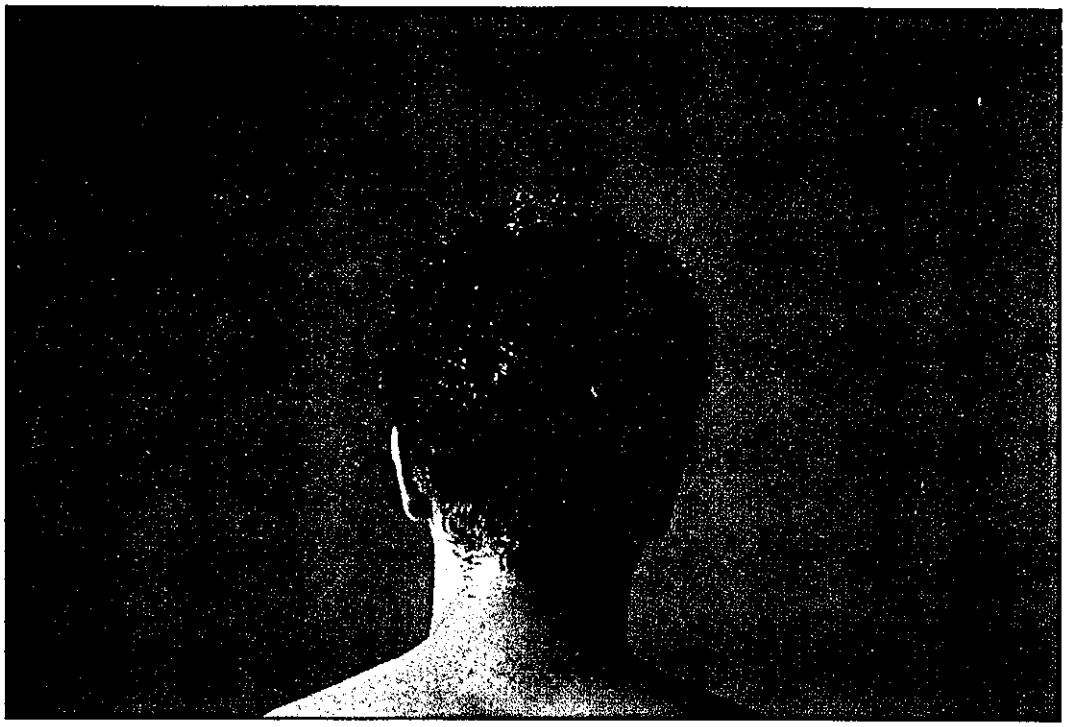
[3] Mills MV et al. The Use of Osteopathic Manipulative Treatment as Adjuvant Therapy in Children with Recurrent Acute Otitis Media. Archives of Pediatrics and Adolescent Medicine, September 2003, Vol. 157.

資料５



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~ Risk Management ~

CVA and Chiropractic Neck Adjustment

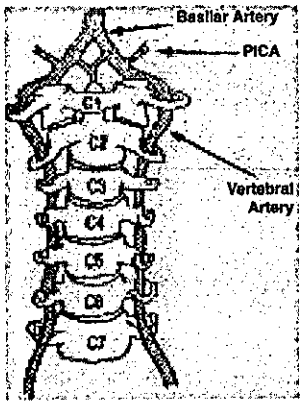
CVA AND CHIROPRACTIC NECK ADJUSTMENT

What you must know!

There is a possible association between neck manipulation and vertebral artery dissections that can lead to stroke. The research establishing the association is primarily level 4 studies (Case Series) and Level 3 (Case-Control Studies)[1] [2]. These studies are not able to establish the strength of the association nor can they establish a causal connection, level 2 and level 1 studies are required to do this. Regardless of the research, our own experience tells us that there are times that these events occur contemporaneously with neck manipulation (as well as other activities involving head and neck movement). Further research is necessary (and is currently underway) to determine if the association is more established or no greater than random chance for these rare events. In the mean time, as we wait on the research to give us the answers, we must for now accept the possible associated risk. This pamphlet will give you some practical information to help you understand this issue. It cannot be comprehensive or complete, given the nature of this document.

Anatomy / Pathology

Relationship of the vertebral artery to the cervical spine.

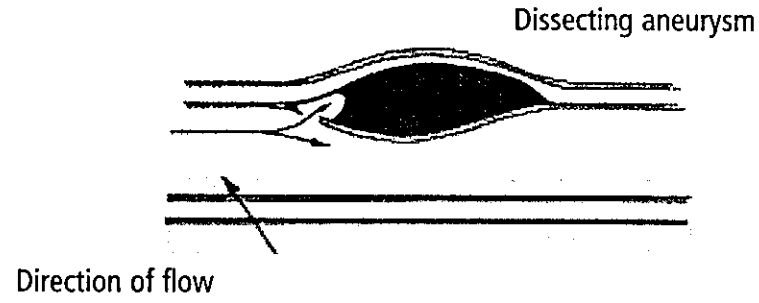


(Above diagram printed with permission 2004 by NCMIC Group Inc. 14001 University Avenue, Clive, IA 50325) [3]

Prior to reading this it would be instructive for you to review the anatomy of the vertebral arteries. You do need to understand the postulated mechanism by which it is thought that cervical manipulation may cause strokes. Most chiropractors (and medical doctors) do not understand the mechanism.

The vertebral arteries are like all arteries in the body. They are made up of 3 distinct layers. The inner layer is an endothelial layer (tunica intima), the middle layer is a muscular layer (tunica media), and the outer layer is a fibrous layer (adventitia). The postulated damage from a cervical adjustment is to the intima. It is speculated that the manipulation causes a disruption (tear) of the intima that allows blood to flow between the intimal layer and the media. This can extend for a distance and create an aneurismal effect on the inside of the artery. This obviously can affect blood flow but only rarely are there neurological symptoms occurring directly from this event. The collateral circulation from the other vertebral artery and the carotid circulation usually make up for any loss of blood flow. The most usual symptom at this stage is very unusual head pain, neck pain, or head and neck pain in combination. It is wise to remember as well that these may be the symptoms that brought the person in to see you in the first place.

Subintimal hematoma with dissecting aneurysm.



(Above diagram printed with permission 2004 by NCMIC Group Inc. 14001 University Avenue, Clive, IA 50325) [3]

It is believed as with any injury, the healing process begins almost immediately and a thrombus forms in an attempt to heal the endothelial damage. The thrombus may occlude the entire lumen in some cases however, as mentioned above, the collateral circulation is usually enough to prevent any neurological deficit. Most often, it is when a piece (or all) of the thrombus breaks away and travels distally, lodging in a smaller artery in the brain stem that neurological symptoms arise. When this happens an area of ischemia occurs in the brain tissue that leads to an infarct. Once there is an infarct the damage to the brain tissue is permanent. In most cases, if the damage is small and localized, complete or almost complete recovery of the neurological symptoms usually occurs.

There are two postulated mechanisms for neck manipulation as a causative factor in these events:

1. initial endothelial tearing or (more likely);
2. the catalyst for the thrombus breaking away and causing the neurological damage and associated symptoms.

Symptoms

The first symptoms of damage to the vertebral artery wall are head pain, neck pain, or head and neck pain in combination. This pain is present in about 92%[4] of the cases. This pain is unusual, different than any pain the patient has had before (even those with a history of head and neck pain), and is often the "worst pain they have ever had". This usually precedes neurological symptoms. Remember this is at the time of arterial wall tearing and when the thrombus is starting to form.

The neurological symptoms that occur in cases of brain stem stroke have been neatly summarized in an anagram that Terrett has published in his book[3]. This is as follows:

The 5 D's And 3 N's.

5 D's: Dysphasia, Dysarthria, Drop Attacks, Diplopia, Dizziness

A: Ataxia

3 N's: Nausea, Numbness, Nystsagmus

(Above reference printed with permission 2004 by NCMIC Group Inc. 14001 University Avenue, Clive, IA 50325) [3]

Haldeman et al. have researched the time of onset of the neurological symptoms from the time of the manipulation. If the stroke is to be associated with neck manipulation the symptoms usually manifest within 48 hours. In fact most are present within 24 hours or less.[4]

Screening Tests

In the past it has been taught that those patient's at risk of stroke from neck manipulation could be identified by doing vascular challenge tests such as George's Test, Houle's Test and others (basically neck extension with rotation, done bilaterally in either the supine or sitting position). **The tests are not valid in determining the group of patients that are at risk of dissections that may lead to stroke from cervical manipulation.** At best putting the head in extension and rotation can provide the clinician with valuable information about pain and restriction in neck movements. It may also give the practitioner valuable treatment cues e.g. if the neck rotation causes any dizziness it would not be a good idea to do an adjustment to that area on that day.

While there has been some public suggestion that X-Rays[5] of the cervical spine have a role to play in screening for those at risk of dissection and stroke from cervical manipulation, there is no scientific evidence that this is the case. X-Rays of the cervical spine should be utilized as a diagnostic tool when the history and examination demonstrate the need to take them. They are not an effective screening tool to rule out the potential for dissections that may lead to stroke.

Informed Consent

This is essential; it has been established in case law in Canada. Many regulatory authorities have practice standards that make it mandatory. It is also an ethical and moral imperative when you are treating a patient's neck. CCPA provides the form that should be used to document the obtaining of informed consent. The patient must also have the opportunity to discuss this with you prior to any treatment being provided. CCPA has discussed the 5 steps to obtaining informed consent in other materials including past Communiqués and the "For The Record" project. An updated version of the informed consent form is included with this pamphlet.

Predisposing Factors

There are no specific tests available to diagnose (screen) those at risk of having dissections from cervical adjustments. Many people that have dissections in their arteries have a connective tissue disease. E.g. Marfan's Syndrome, fibromuscular dysplasia, etc. A careful history is essential in determining if any of your patients have been diagnosed with these conditions. Family history of dissection should also alert you to an increased risk. There is no apparent correlation to a specific technique in the cases associated with cervical adjustments. There is no apparent correlation with whether or not the patient is having their first or one of many cervical treatments.[4]

Managing The Risk

As a general principle in risk management there is no substitute for a careful history that informs your examination procedures. The findings from your history and examination should lead to a diagnosis. The diagnosis must be communicated to your patient along with the risks of care. This should culminate in the informed consent process prior to treatment. All of these steps must be properly recorded in your clinical notes. The treatment surely must match the history, examination,

and diagnosis. All of this must be clearly documented in writing. Your SOAP notes must clearly define the patient's Subjective, Objective, Analysis, and the Procedure done on each visit. If there is a gap or disconnect in this sequence you have missed something.

Specifically, in the diagnosis of those who are at risk for adverse outcomes from cervical adjustment consider the following. The subgroup that is most at risk from dissections that may lead to a stroke are patients between the ages 20 and 45.[4] There is a tendency for more females[4] to have vertebral artery dissections than males. The general risk factors for stroke are not helpful in determining those at risk from dissections that may lead to stroke. The experience we have at CCPA is that many of the cases we encounter, where a stroke occurs contemporaneously with a cervical manipulation, are cases where the dissection has likely already occurred. The patient has consulted the practitioner and has been treated for neck pain, head pain, or head and neck pain that is probably indicative of the onset of the dissection. It is possible that the neck adjustment may facilitate the break up of the thrombus that causes the stroke in the brainstem. It is just as conceivable that the adjustment is inconsequential in this process. As mentioned earlier the harbinger of dissection, prior to neurological symptoms occurring, is very unusual head pain, neck pain, or head and neck pain in tandem. If you listen carefully to your patient you may be able to recognize when their presenting symptoms are different from the norm. This is clearly a time for caution when providing care. In fact no cervical care on that day may be a good option. There are other procedures available that the practitioner may be prudent utilize until the condition becomes more transparent. If you have any significant concerns a referral prior to providing care is essential. It is strongly advised that you send a note with the patient or phone the doctor you are referring the patient to, ensuring they understand the reason for your referral. The precursor symptoms are so poorly understood that many health care professionals do not appreciate the importance of the presenting complaints.

Emergency Care

It is vital you recognize the symptoms of stroke. The symptoms as described earlier in this document are serious and demand immediate attention. The patient must be referred immediately to an emergency care facility. Your support staff must call 911 while you monitor the patient. The vital signs must be checked and an airway kept open at all times. If there is a cardiac arrest CPR must be initiated at once. It is much better to over estimate the situation than to neglect a referral. In many instances of ischemic stroke early intervention can make a significant difference in recovery. If it turns out to be something other than a medical emergency you have at least erred on the side of caution.

Some patients may exhibit mild unusual symptoms after a treatment that don't require a referral. For instance some people report mild dizziness on arising after a treatment. This alone is not a medical emergency and in office monitoring is all that is necessary. As long as the dizziness clears the patient can be sent home, albeit with instructions to call you or their physician if the symptoms reoccur or other symptoms arise. Record keeping is essential to make sure you can follow up if necessary. A courtesy call to the patient later that day to make sure the symptoms have abated is a good idea.

Finding the Answers

The chiropractic profession is determined to find the answers to this difficult problem. Although there are many research studies underway, there are two key research initiatives ongoing that we are awaiting the results from:

The Chiropractic Neck Study: A case-control study to assess the risk of stroke associated with chiropractic neck adjustment:

The Chiropractic Neck Study: A case-control study to assess the risk of stroke associated with chiropractic neck adjustment is being conducted under the direction of Dr. Michael Hill, a neurologist and epidemiologist with the Departments of Community Health Sciences and Clinical Neurosciences at the University of Calgary.

The study is a blinded, prospective, matched case control study with two components. The case-control part will match patients with stroke caused by dissection (cases) to patients with stroke from other causes (controls). All consenting patients will be interviewed to assess exposure to all suspected risk factors for dissection including recent chiropractic neck adjustment in the previous 90 days. Patient recall will be corroborated with Alberta Health data and interviews with the treating chiropractor. The result will be an estimate of the relative risk of stroke due to dissection after chiropractic neck adjustment or other trauma. This result is expected to be available in approximately six to twelve months (Spring 2005).

The second component is a prospective accounting of the number of dissections (all causes) in a calendar year in the Calgary Health Region and the number of neck adjustment procedures in the Calgary Health Region in the same time period. All cases of dissection will be interviewed to determine whether there has been recent chiropractic treatment. The incidence of dissection per chiropractic treatment will then be calculated. This portion of the study is completed and the data are currently being collated and analysed.

- Case-control studies are an ideal methodology for studying rare diseases but may be subject to bias. Prospective data collection and blinding of the interviewer will help to reduce bias in these two studies.

- The study will provide an estimate of the relative risk of stroke due to dissection after chiropractic neck adjustment.

- The study will also provide an assessment of the true incidence of stroke due to dissection after chiropractic neck adjustment and other minor trauma.

This study has been funded by the Heart & Stroke Foundation of Canada and the Canadian Chiropractic Protective Association.

And...