Visceral Effects of Chiropractic Manipulation

A Literature Review

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ABSTRACT

Background and Objective: Many chiropractic advocates recognize that chiropractic adjustments help conditions other than that of musculoskeletal, but visceral in effect. The purpose of this review is to comprehensively examine and detail the literature concerning the effects of chiropractic manipulation on visceral conditions.

Data Sources: Articles reviewed were obtained by conducting a computer-aided search of papers indexed in *Medline* from the past six years (1992 to 1998). In addition, abstracts and bibliographies from pertinent articles were manually searched.

Data Synthesis: There is much literature on the clinical correlations between the relief of visceral conditions and chiropractic spinal manipulation, even within the past six years. Recent journals have made correlations with hypertension, asthma, menstrual disorders, indigestion, ear infections, bowel motility disorders, sinusitis, colic, enuresis, hiatal hernia, hypertension, ulcers, and cardiac arrhythmias.

Conclusions: Although correlation between chiropractic manipulation and relief of visceral disorders does exist in the literature, generally designs are weak and results are variable. More appropriately controlled and scientifically empirical studies must be established.

INTRODUCTION

Over the course of chiropractic history and even still today, many chiropractors support the relationship of manipulation and relief of visceral symptomology. Despite political friction, a survey in Australia demonstrated more than half of the respondents

believe there is a therapeutic role for adjustments in the management of certain visceral disorders (1). Even as early in a career as chiropractic internships, new interns witness the relief of non-musculoskeletal symptomatology through chiropractic adjustments. Sometimes this relief occurs inadvertently while treating someone with a condition such as low back pain. Some examples of somatovisceral responses under chiropractic care are hypertension, asthma, menstrual disorders, indigestion, ear infections, bowel motility disorders, sinusitis, colic, enuresis, hiatus hernia, hypertension, ulcers, and cardiac arrhythmias (1-15). Treating visceral conditions with less or no medications can be beneficial to the patient in respect to side-effects (2,3). Within this literature review lies the most recent comprehensive information that can be used by today's chiropractor as a source of clinical correlation between chiropractic manipulation and relief of visceral conditions.

One thing must first be understood, many conditions that exist today are not due to only one cause. This is why chiropractors must be integrated with others in the medical field as a source of treatment options for common ailments such as those described above. For example, there are two reasons for visceral disorders, those which are vertebrogenic, which will either mimic a condition (4) or set up an environment to lead to the susceptibility of that condition; and those which are the actual visceral disorders that can cause viscerosomatic reflexes to display musculoskeletal conditions. Since there is no current technology to decipher the two, chiropractic and medical physicians should work hand-in-hand in the treatment of any ailment in the human body, especially if one of the two fields happens to be unsuccessful.

Various somatic sensory stimulations occur with the chiropractic adjustment. These include cutaneous, muscle, and articular sensory stimulations. Adjustment of the spinal fixations can permit sensory stimulation's quicker myelinated neurons to over-ride the slower pain neurons thereby explaining relief of visceral pain. Spinal fixations are also proposed to abnormally modify autonomic nervous system activity (16,17). The

autonomic nervous system gives nervous input to the viscera of the body. In addition, it regulates blood flow to the viscera (5). There is some segmental organization of autonomic visceral innervation, more so at some segments than at others, but it varies somewhat from individual to individual (1). The autonomic nervous system is divided into the sympathetic and parasympathetic nervous system. Sympathetic neurons emerge from the spinal cord through the thoracic and upper lumbar areas of the spine. Parasympathetic neurons emerge from the cranium, upper cervical vertebrae, lower lumbar vertebrae, and pelvis. Thus, anatomically, nerve interference along the spinal nerve root to the viscera appears plausible.

DISCUSSION

Asthma

Asthma is the cause of symptoms such as dyspnea and wheezing. This can be the result of increased bronchoconstriction due to increased vagal parasympathetics. As a means to decrease vagal tone, chiropractors adjust the spine. Most chiropractors tend to adjust the upper thoracic spine (T1-T6) in persons suffering with asthma (1). In acute cases, though, caution must be advised and the need of medicine may be necessary. In extrinsic asthma, avoidance of possible antigens as well as chiropractic manipulation is in the patient's best interest. Subjective improvements have been shown in asthmatic patients after spinal manipulation, though objectively, co-treatment with medical physicians is a necessity (6). In a study by Nielson, Bronfort, Bendix, Madsen, and Weeke (7), even though there was no clinical significance in forced expiratory volume and forced vital capacity between the chiropractic adjusting session and the controlled sham adjusting session, non-specific bronchial hyperreactivity improved by thirty-six percent ($P=0.01$) and patient-rated asthma severity decreased by thirty-four percent ($P=0.0002$).

Enuresis

Enuresis, whether psychologically, physiologically, or traumatically (8) related, is the involuntary release of urine in individuals who should have already normally developed mechanisms for bladder control. This should usually occur by the age of five. If not waiting for self-resolvance, proper psychotherapy or deconditioning therapy may be appropriate. Chiropractic care may help in the sense of relieving parasympathetic tonicity. The parasympathetic nervous system is responsible for contraction of the bladder.

A case report by Blomerth (9) illustrated an eight year-old subject which was unsuccessfully receiving medication for functional nocturnal enuresis, which is bed-wetting in the absence of pathology. This had occurred about six times per week. Eliminating the placebo effect and following chiropractic assessment and adjustment of the lumbar spine, the subject immediately stopped bed-wetting. Over the next three years, two reoccurrence of enuresis after mild sport injuries were also immediately resolved after one to two treatments each.

Reed, Beavers, Reddy, and Kern (10) studied primary nocturnal enuresis by comparing thirty-one enuretic children treated with chiropractic manipulation to fifteen enuretic children treated with sham adjustments. Following a two week period of treatment, no change in frequency of bed wetting was noted in control group, but the experimental group showed a drop of frequency from 9.1 to 7.6 nights of bedwetting per two-week period. Twenty-five percent of the experimental group showed a drop of nocturnal enuresis by fifty percent or more, whereas the control group no subject did.

Hypertension

Hypertension is a major risk factor for the leading cause of death, cardiovascular diseases, such as cerebrovascular accidents and coronary artery disease. As a major risk factor, it is important to detect its presence and bring it under control. Along with other therapies, such as dietary changes and exercise, spinal manipulation has also been

documented to do so. If chiropractic procedures are used in conjunction with medical care, hypotension must be monitored for by both the chiropractor and the medical physician (2,11). A decrease in medication may be needed.

Chiropractic adjustments are performed to decrease sympathetic tone, which plays an important role in influencing hypertension. There is an intimate relationship with sympathetic efferent neurons and the smooth muscles of blood vessels, thereby controlling the quantity of blood flow to the periphery. Segments thought to be involved in hypertension include upper cervical vertebrae by way of the superior cervical ganglia and the superior cervical cardiac nerve to the heart; upper thoracic vertebrae by way of the sympathetic trunk to the heart, aorta, and lungs; and lower thoracic vertebrae by way of the splanchnic nerves to the renal plexus (11). Most chiropractors tend to adjust the upper thoracic vertebrae for hypertension (1).

According to Sato (12), adjustment of the spine at the lower thoracic vertebral (T11-T12) or lumbar vertebral (L3-L4) levels produce clear and consistent decreases in blood pressure immediately after the onset of the stimulation. A decrease in heart rate of about six beats per minute with maximal stimulation of these areas was also seen. In addition, immediate, but short lasting decrease in nerve activity of the adrenal medulla is seen in adjustments of these areas. Decreased adrenal medulla activity decreases the release of dopamine, norepinephrine, and epinephrine which also directly decrease blood pressure and heart rate.

A case report, by McGee (11), illustrates this chiropractic effectiveness. This case demonstrated a forty-six year old hypertensive female who quit smoking, undertook nutritional changes, and ingested medications, but at no avail. Neck pain and stiffness as well as malpositioned and hypomobile atlas, C4, C5, C6, and T1 was demonstrated on chiropractic examination. After seven and a half weeks of chiropractic adjustments, medication was decreased in half, neck pain and stiffness remised, and her blood pressure dropped from 134/90 to 110/74.

In a case report by Plaugher and Bachman (2), the use of adjustive techniques were applied to the subject to decrease hypertension after fourteen years of numerous pharmaceutical care. The subject, a 38 year old male, under medical care was eventually weaned off of all medications. During the two months of chiropractic care, not only did the blood pressure drop after each treatment, but it stabilized to normal after eliminating all medications.

More focalized, a study by Goodman (13), isolated the decrease of hypertension from adjusting only the atlas. Over the course of two months of adjustments as needed, eight subjects found they had a decreased systolic blood pressure by an average of 27 mm Hg and a decrease in diastolic blood pressure by an average of 13 mm Hg.

Otitis Media

Otitis media, inflammation of the middle ear, is known to be one of the most common childhood infections. Otitis media can be accompanied with a temporary hearing deficit, headache, occipital point tenderness, sore throat, or sinusitis. Chiropractic adjustments can help children with otitis media. Adjustment of the first cervical vertebrae affects the vagus and superior cervical sympathetic ganglion, which innervates the muscles involved with the opening and closing of the auditory tube (14). This allows fluid to escape from the middle ear when needed. Chiropractic treatments are based upon increasing the function of Eustachian tube and the immune system (18).

According to Phillips (14), presented with bilateral chronic otitis media, despite medical care, was a twenty-three-month-old female. Following an atlas adjustment, the subject responded immediately. With continued chiropractic care, the patient became symptom-free for the following four years.

Froehle (18) studied forty-six children under five years of age with the use of chiropractic spinal manipulation and progression of the children's ear infections. Ninety-three percent improved, seventy-five percent in less than ten days, and forty-three percent

with only one to two treatments. More treatments and slower healing times were noted in children with past use of antibiotics as a source of treatment for the ear infection.

Premenstrual Tension Syndrome

Premenstrual tension syndrome (PMS) is a condition women experience prior to menstruation. Symptoms of PMS can include water retention, mood swings, headaches, irritability, depression, and more. Wittler (15) performed a study in which he evaluated the symptomology of PMS following regular chiropractic care. The study consisted of the subjective responses of a group of eleven women with PMS symptoms, each of which were adjusted over the course of four menstrual cycles, moreso prior to menstruation. Major subluxations were at the upper cervical vertebrae and the sacroiliac joints. Overall, the study showed improvement in every symptom of PMS, especially the symptoms of inefficiency, dysphoria, variation of sexual habits, physical symptoms, and social impairment.

Ulcers

Ulcers are open sores or lesions of the mucous membrane accompanied by sloughing of inflamed necrotic tissue due to the action of gastric juices (19). Chiropractic care could conceptually increase nerve function to help build up endothelial walls or release the proper hormones to initiate healing. According to Pikalov and Kharin (3), a pilot study of eleven men and women with endoscopically confirmed acute duodenal ulcers were treated with chiropractic manipulation against twenty-four subjects treated with traditional medication. Ulcer size as well as mean subject age were virtually equivalent with each subject displaying their first ulcer. Lower thoracic vertebrae (T9-T12) were most commonly affected. Subjects undergoing chiropractic care healed an average of ten days earlier (16 days on average) than the medicated group with a p-value of < 0.001.

CONCLUSION

There is a physiological plausibility that chiropractic manipulation can help out visceral conditions, but needed in this field of study is research that is more empirically scientific. Although some clinical correlation exists in literature today, scientific designs are rather weak and results are somewhat variable. This article is designed for chiropractic practitioners as a source of material to look up, analyze, and evoke the planning of continued randomized, controlled clinical trials. Further investigation is necessary. The need for closely monitored clinical trials in these areas are great. Development of this research is not only vital for this profession, but also for the health of mankind.

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