

**The Ministry of Health and Welfare**  
**1990 Health Science Research Report on**  
**Medical Research on Manipulative Therapy for**  
**Diseases of Spinal origin**

**Research Director:**

**Yukio Miura, M.D., PhD**

**Professor of Orthopedic, Tokyo Medical College**

1. Object of the research
2. Method of the research
3. Results
  - 1) Investigation and opinions about Chiropractic theory and techniques
    - a. Basic theory
    - b. Method of spinal examination
    - c. Techniques(treatment)
    - d. Effectiveness
    - e. Risks of chiropractic treatment
  - 2) Investigation of cases of Chiropractic in Japan resulting in aggravation of the condition
    - a. Cases from Japan Clinical Orthopedic Association
    - b. Case study of Japan Orthopedic Association
    - c. Investigation on scoliosis patient
  - 3) Proposal
    - a. Recognition of contra-indicated diseases for chiropractic
    - b. Prohibition of dangerous techniques
    - c. Prevention of delay of medical treatment
    - d. Restriction of exaggerated advertisement

Research subject : Medical research on manipulative therapy for  
diseases of spinal origin  
Research Director : Yukio Miura, M.D., Ph. D. Professor of  
Orthopedics, Tokyo Medical College

Research members :

Hajime Ishida, M.D., Ph. D.,  
Professor of Orthopedics, Japan Medical  
College

Kiyoshi Otani, M.D., Ph. D.,  
Director, National Sanatorium, Murayama  
branch

Masanari Kawabata, M.D., Ph. D.,  
Chief Director, Orthopedic Department  
of Toranomom Hospital

Takahide Kurokawa, M.D., Ph. D.,  
Professor, Tokyo University, Medical  
Department

Yoshihisa Takase, M.D., Ph. D.,  
Chief Director, Takase Orthopedic  
Hospital

Katsuya Shinohara, M.D., Ph. D.,  
Chief Director, Shinohara Hospital

Kiyoshi Hirabayashi, M.D., Ph. D.,  
Assistant Professor, Keio University,  
Medical Department

### 1. Object of the research

To clarify medical validity of the theory concerning chiropractic and other spinal therapies, and the effectiveness and risks of clinical examination methods and therapeutic techniques; at the same time, to study cases resulting in worsening of the conditions, and provide validity both medically and from the medical doctor's point of view concerning Chiropractic.

### 2. Method of the research

In order to discuss the medical validity of Chiropractic theory, we studied related documents and interviewed some practitioners about chiropractic theory and techniques; and experienced their methods through receiving chiropractic treatment. Also, we investigated and analyzed several cases of chiropractic patients whose treatment resulted in worsening of the problem or other injury unrelated to the original disease.

### 3. Result

#### 1) Investigation and opinion concerning chiropractic theory and techniques

##### a. Basic theory

Chiropractic is a therapy that treats various diseases by adjusting the mechanical imbalance of the spine and pelvis. The theory is based on a hypothesis that misalignment of the vertebral juxtaposition causes functional disorder of various parts of the human body; however, this chiropractic theory is not clinical theory based on functional pathology, but rather it should be called ideology. Besides, the relationship between the imbalance of vertebral juxtaposition and other diseases that chiropractic theory is based on has not been proven in any scientific method today. "Subluxation", the main principle of Chiropractic ideology is a disorder of the vertebral articulation which occurs from various causes, and it is said that these causes are anatomical, kinetic physiological alterations of the vertebral articular relationship that can be found by the therapist mainly through palpation. On the other hand, it is said that the subluxation does not necessarily cause problem symptoms. This chiropractic subluxation is different from the subluxation in the medical terminology. It is not provable on x-ray film or other methods of investigation, and its scientific definition is unclear without concretion and evidence. In sum, medically, it is not possible to show evidence of the relationship between the subluxation and complaint or symptoms at this time.

##### b. Method of spinal examinations

In chiropractic, examinations involving consultation and observation are utilized, but more emphasis is on palpation. It is said that an expert practitioner can palpate spinous processes and even mammillary processes and articular processes although their method of expression differs from the Palmer

method to the National method; and by the process of "motive palpation" which is a method of examining the spine in motion by palpation. They can even find the vertebrae of hypermobility, hypomobility (fixation), and differences from right to left. Also, an expert practitioner can palpate muscular induration, hypertension, bulging and pressure points. However, palpation of the spine is rather difficult except in spinous processes, palpation of mammillary processes are especially anatomically impossible. It is possible to examine spinal curvature and range of motion by palpation to a certain extent but the method is lacking in objectivity. It is possible to examine muscular induration or pressure points by palpation, but it is impossible to judge if they are caused from spinal misalignment by palpation only. Through the observation of chiropractic technique it was shown that the method of spinal palpation varied largely from one practitioner to another. The practitioners methods of examination are not based on knowledge of human anatomy, but are subjective and unscientific. For example, it is hard to believe that they can palpate atlas, axis and mammillary processes of the spine, and it can be said that there are many errors in the examination method. Even if there is a subluxation of the sort used in medical terminology, it is impossible to diagnose by palpation only. Meanwhile, it is said that subluxation can not necessarily be shown on x-ray; there is no means to prove the existence of chiropractic subluxation scientifically.

c. Techniques (treatment)

Basically chiropractic treatment consists of manipulative adjustment of the spine and pelvis, however physical therapy, exercise, and even dietetic therapy is utilized by some practitioners. There seems to be various manipulative adjusting methods; they are mainly a quick thrusting method, a slow non-thrusting method and a manipulation method for muscle relaxation. From inspection of techniques, it can be said that the quick thrusting method with rotation and extension for cervical adjustment is extremely dangerous. Also there are some techniques which closely resemble physiotherapy techniques. It is hard to treat a mechanical disorder like spinal misalignment by manipulative adjusting techniques, and it is also dangerous. Even if subluxation exists, and it is possible to recover through the use of these manipulative adjusting techniques, we can imagine that the problem may easily reoccur.

d. Effectiveness

The functional mechanism of chiropractic treatment is explained as the overcoming of hypersensitivity, elevation of pain sensation threshold, relief of sympathetic nervous system stimulation and so on by removal of "subluxation"; however, practitioners themselves recognize that they are all based on empirical facts, and not scientifically explained. Indications of chiropractic treatment are those symptoms that are thought to be caused by subluxation, and even diseases of organic origin are treated for reduction of the pain, and further more stomach ulcers in early stages can be positive indications for chiropractic treatment to activate the recuperative power of the body. Evaluation of the effectiveness is done totally by lowering

the degree of the patient's complaint, postural improvement, correction of Subluxation, and kinetic improvement. However, the method for judging the indication of chiropractic treatment and evaluation of effectiveness largely relies on subjective analysis of the practitioners; therefore, it is questionable that there is no repetitive evidence which is a point of paramount significance for medical validity.

e. Jeopardy

Contraindications for chiropractic treatment are generally said to be as follows; tumorous diseases, hemorrhagic diseases, and infectious diseases. Also, some practitioners include rheumatoid arthritis, amyotrophic diseases, and cardiac diseases. However, there are other diseases which have a risk of higher percentages that can aggravate the patient's condition by giving manipulative adjustment; for example, disk herniation, ossification of the posterior longitudinal ligament, spondylosis deformans, spinal canal stenosis, Osteoporosis, atlanto-axial subluxation (medical) unstable lumbar spondylosis, spina bifida, spondylolisthesis and so on. These should be included in the contraindication for chiropractic treatment. Exclusion of contraindicated diseases is done mainly from consultation, because diagnoses by using various medical diagnostic equipment is prohibited for the practitioners in Japan. Practitioners insist that there usually are no problems, since most of their patients have been examined by medical doctors before they visit the chiropractic office. According to the chiropractic practitioners, the general risk of the manipulative adjustment is caused from treatment done by practitioners who have no educational background of basic sciences, and even scientifically educated people should study chiropractic theory before they start practicing, otherwise it could be dangerous for their patients.

2) Investigation of the damaged cases in Japan

We investigated chiropractic theory and damages by studying actual individual cases in this research. With cooperation of members of the Japan Clinical Orthopedic Association, we investigated cases reported by the members, and also investigated cases that were collected by the Japanese Orthopedic Academy. Also, investigation of the effect of chiropractic treatment for scoliosis patients was done by questionnaires answered by the patients at the Murayama national sanitorium.

a. Cases reported from Japan Clinical Orthopedic Association

The following are cases of patients who had organic impediment which was undoubtedly damaged or aggravated by chiropractic treatment.

[case 1]

female, 49 years old

Chief Complaint: neck pain

Present Illness: Received chiropractic treatment for the pain. She was given three adjustments because the adjustment was not audible, after that she did not have release from the pain and experienced heaviness in the head, loss of appetite, and dullness

of feeling in both hands appeared.

X-ray findings: reversed physiological curvature with the c5, c6 areas at the top of the posterior curve, and slight anterior sliding at c3/c4, marked degenerative change of the disc at c5/c6, inferior surface of c5 and superior surface of c6, and the intervertebral foramen at the same level is narrower on the right side.

Comment: In this case, nerve root signs were brought about by giving chiropractic adjustment to a patient who already had spondylosis deformans.

[Case 2]  
male, 80 years old,

Chief Complaint: pain in the left lower extremities

Present Illness: The pain in the left lower leg started two days prior to visiting a medical institution where he received treatment. However, pain in the leg during walking occurred, and with his friend's referral he visited a chiropractic office and received treatment. The patient then experienced disability in walking was hospitalized in a medical institution.

X-ray findings: Tilting of lumbar vertebrae, degenerative change of discs specially at the level of L4/5, L5/S. Marked thinning of L4/5 disk. Marked ossification of the anterior longitudinal ligament, and bridging callus were found.

Myelography: Spinal canal stenosis at the level of L4/5.

Comment: This is a case of aggravation of the root sign brought on by chiropractic treatment to the patient who had spinal canal stenosis caused from spondylosis deformans.

[Case 3]  
male, 61 years old,

Chief Complaint: Numbness in both upper extremities.

Present Illness: Treated at a medical institution for pain and numbness in both lower legs, and had improvement in symptoms. After that, received chiropractic treatment, and numbness in both upper extremities appeared, and he visited the medical institution again.

X-ray findings: Compound type of calcification of posterior longitudinal ligament is seen from C1 to C5, and significant spinal canal stenosis was seen at C4/5 level. Ossification of anterior longitudinal ligament also existed at level of C5-7, this could be considered as association of ankylosing spondylosis.

Comments: This is a case of aggravation of spinal cord condition caused by chiropractic treatment on ossification of posterior

longitudinal ligament.

[Case 4]

male, 79 years old,

Chief complaint: Pain in the left shoulder

Present illness: Pain in the left shoulder started ten years ago, and was treated by a medical doctor. The problem was diagnosed as calcification of posterior longitudinal ligament. He was treated for it by a medical doctor. He visited chiropractic practitioner for aggravation of his left lower extremity paralysis, and after the first treatment the left upper and lower extremities were completely paralyzed, and after the second treatment all extremities became paralyzed. He visited a medical institution for his functional impediment of urinary bladder and rectum, and received treatment, but there was no improvement.

X-ray examination: There was a large compound type of calcification of the posterior longitudinal ligament at the level of c1, c2 through c4, and at the c5,6 level there was marked calcification of the anterior longitudinal ligament, and there was anomalous range of motion at c4,5 level. Myelography showed marked spinal canal stenosis.

Comment: This is a case of extreme aggravation of organic impediment brought by chiropractic treatment to a patient who has myeleterosis caused from calcification of the posterior longitudinal ligament of the cervical.

b. Analysis of cases in 1985

The result of analysis of fifty-four actual damaged cases which was investigated and reported by the Japanese Orthopedic Academy in 1985 showed their cause of diseases are classified as the following. (See table 1)

Accordingly, the damaged parts of their bodies in the cases of active damage that has occurred and/or was aggravated by chiropractic treatment are shown mainly in the cervical and lumbar areas, and also in the hip and elbow joint area in some cases. Also this damage was seen mostly in the structure of the spinal cord, coda equina and spinal nerve roots and in some joints (distorsion) and bones (fracture). Examples of active damage that interrupted the healing mechanism from this therapy were seen in two cases of discitis. Also, as a result of delay or interruption of medical treatment due to the chiropractic therapy, seven cases of idiopathic scoliosis were aggravated. These are cases of aggravation which can be called "passive damage". From the above cases of aggravation, the harmfulness of chiropractic treatment is obvious and further, the mechanism of damages are arranged in table 2. As cases of "active damage" that are caused to occur and/or aggravated by this therapy there are possibilities of causing distorsion of joints and fracture of vertebra, rib and femur with violent manipulation and as a result cause pain. Further, supposing there is osteoporosis, ossification of posterior longitudinal ligament, ossification of



yellow ligament, spondylosis or tumor, violent manipulation of course, and even non-violent manipulation can cause fracture or disc hernia, and result in paralysis with a damaged spinal cord or spinal nerve root. If a chiropractor should provide this treatment without recognizing discitis, the natural healing mechanism would be interrupted and obviously aggravate the condition; this also is considered as active damage. Meanwhile, providing this deceptive treatment for cases like an idiopathic scoliosis patient , causes delay or interruption of receiving proper treatment, and a resultant loss of effectiveness of treatment. This may be considered as a case of passive damage.

Table 1. Classification of the 54 damaged cases

1) Active damage

A. Occurrence, aggravation

2) Passive damage

A. Delay or interruption of medical treatment

parts	damage	Number of cases
cervical	spinal cord damage	7
	spinal nerve root lesion	4
	distorsion	5
thoracic	spinal cord damage	3
	fracture vertebral body	2
	rib	1
lumbar	damage of cauda equina	5
	spinal nerve root damage	5
	fracture vertebral body	2
	transverse process	1
	articular process	1
	distorsion	5
hip	fracture	2
	distorsion	1
elbow	myositis ossificans	1

aggravation of scoliosis	7
--------------------------	---

total 45

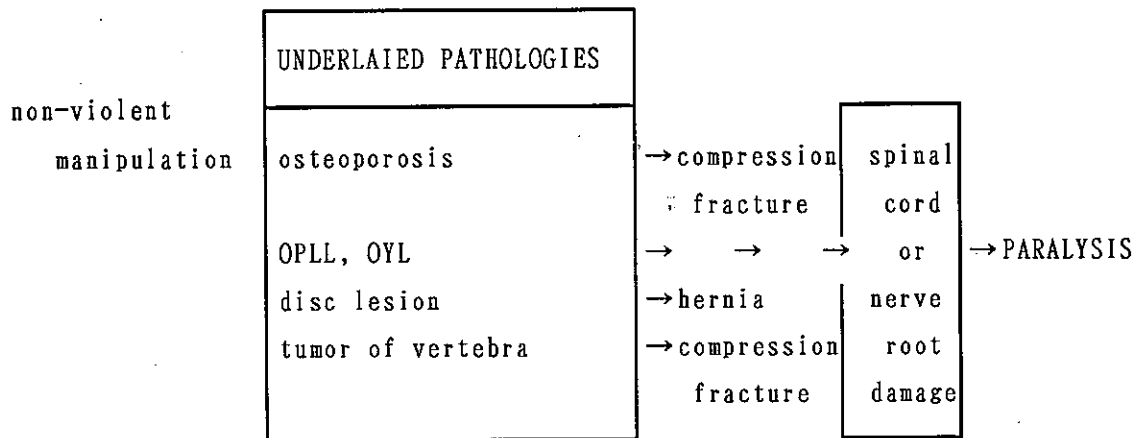
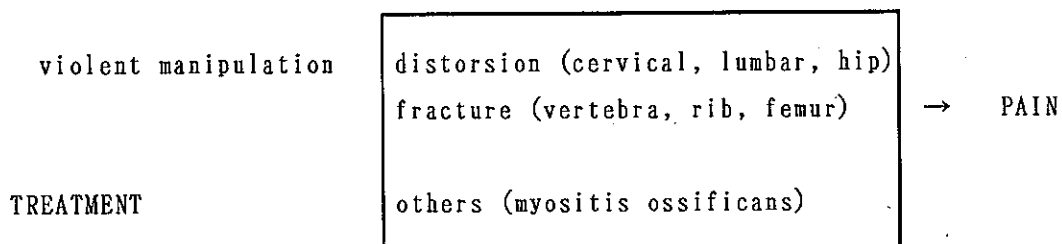
B. Interruption of healing mechanism

discitis aggravation

2

Table 2. Occasion of actual damaged cases

1]. Active damage A: (occurrence, aggravation)



Active damage B: (Interruption of medical treatment)

Discitis

2]. Passive damage: (Delay or interruption of medical treatment)

Idiopathic scoliosis

### c. Investigation of scoliosis patients

Inquiries were made about the chiropractic treatment for 300 idiopathic scoliosis patients and collected 162 answers. Out of the 162 patients, 11 percent of them received chiropractic treatment, and 12 patients recognized the effectiveness of their treatment. Explanations of the effectiveness were the subjective effect of reduction of pain and tension in the shoulders, back and lower back, and there was no response regarding improvement of curvature of the back. Following is a case of an individual who recognized the effectiveness of chiropractic treatment.

13 years old, female, idiopathic scoliosis

Scoliosis was found at the age of 12 . At that time the degree of the scoliosis was thirty-seven degrees. She received chiropractic treatment once or twice a week for a year. After each treatment she felt release from her stiffness in the shoulders and tension in her low back. At the age of 13, the degree of scoliosis was found to be forty-seven degrees. Since then, she has been given appropriate treatment at a medical institution. This case of scoliosis was progressive, and marked aggravation of the scoliosis was seen in the patient. This is an example of the passive damages that caused delay of the proper medical care because of chiropractic treatment. Improvement of organic scoliosis by chiropractic treatment is absolutely impossible. The effectiveness of chiropractic treatment is recognized by only the subjective evaluation of the temporal release from tension of shoulders and low back.

### 3) Proposal

As already mentioned in 1), chiropractic theory, especially "Subluxation" which supports the main concept of chiropractic is different from the medial term of subluxation, and despite years of research in many foreign countries, we can not help saying that the scientific definition is still unclear. On the other hand, we find data concerning the effectiveness of chiropractic treatment based on subjective symptoms like releasing of the pain as in a paper lately reported in England. It is also a fact that there are some people who assert or recognize the effectiveness of chiropractic treatment in our country. In the United States of America, a degree called "Doctor of Chiropractic" is recognized in all states, and chiropractic treatment is included in Medicare and other medical security systems. However, scientific evaluation based on statistical management and repetitive objective data about the improvement of symptoms excluding self-healing and placebo effects has not been done yet. Although it has been a long time since the introduction of chiropractic in Japan, and it has gained respect in some areas, it must satisfy the minimum scientific requirement of "objectivity" and "repetitive evidences" to gain medical validity. As mentioned above, a chiropractic theory and its objective effectiveness can not be clarified at this point. Chiropractic must be evaluated by scientific methods in order to gain social recognition as a healing art which contributes to national health and its improvement. Therefore we believe that it is necessary for us to continue to seriously consider objective evaluations of

chiropractic effectiveness from now on. However, this research project, concluded from the standpoint of maintaining national health is necessary for us to clarify the risks and damages which chiropractic treatment may cause. We conclude as follows : We ask for not only chiropractic practitioners but also the people in Japan to realize these risks, and it is necessary to prevent chiropractic malpractice beforehand.

A) Recognition of contra-indicated diseases

As already mentioned above, contra-indicated diseases for chiropractic treatment are generally recognized as tumorous diseases, hemorrhagic diseases, infectious diseases, and some include Rheumatoid arthritis, amyotrophic diseases and cardiac diseases. However, those other diseases which were clearly diagnosed and have risk of higher percentages that can aggravate the patients condition by giving manipulative adjustment; for example, disc herniation, ossification of the posterior longitudinal ligament, spondylosis deformans, spinal canal stenosis, osteoporosis, atlanto-axial subluxation (medical), unstable lumbar spondylosis, spina bifida, spondylolisthesis, and so on. Therefore, it is necessary not only for chiropractic practitioners but also people to clearly recognize these contra-indicated diseases.

B) Prohibition of dangerous manipulative techniques

As already mentioned above, there are many different techniques in chiropractic, and some of them are dangerous, especially the quick thrusting method for cervical adjustment with rotation and extension, which has a high possibility of causing damage to some patients. Therefore this method of treatment should be highly discouraged.

C) Prevention of delay for medical treatment.

It is necessary to promptly stop treatment and to have a medical examination in such cases of aggravation or no improvement of symptoms, despite prolonged chiropractic treatments because of the possibility of underlying organic diseases. If the spinal damage caused by the thrusting method is called "active damages", aimless treatment, which may lead to a delay of proper medical treatment should be called "passive damages". It also is feared that they bring about confusion into proper medical care by their explanation of the causes of diseases and mechanisms of symptom occurrence with selfish and inductive explanation.

D) Restriction of exaggerated advertisements

The so called "chiropractic boom" in Japan these days is the result of commercially based, extravagant advertising and the exaggeration of its effectiveness. Medical care and legal pseudo medical practice (i.e. massage, acupuncture, bone setting) are strictly regulated by law, but chiropractic and other extra medical care are not clearly regulated. However, some policies which strictly regulate extravagant advertising should be made from the point of view of keeping patient's health.