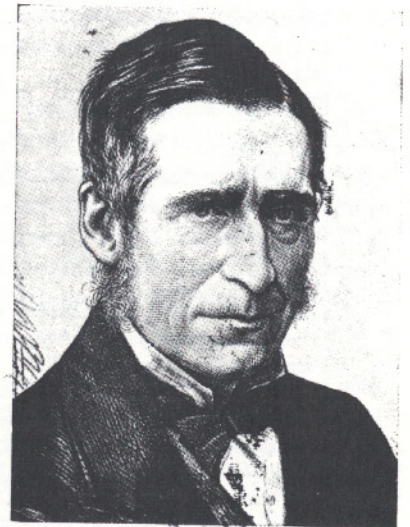


The conception of subluxation is "still enigmatic," the author contends, even though there is a literature in medicine that attempted to define it 150 years before Palmer. Nineteenth century English physician Wharton P. Hood, a member of the Royal College of Surgeons, was among those who contributed to this literature.



The Search for the Subluxation: An Investigation of Medical Literature to 1985

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A review of readily accessible literature reveals that the first attempt to describe subluxations as understood by chiropractors was 240 years ago. Since then many have attempted to describe this lesion. Official opinions have included "subluxations exist only in the chiropractor's imagination" and "to deny that such functional defects can exist is in the present state of knowledge, an unreasonable and unscientific stance." Hypotheses of subluxation are reviewed by exploring the literature, prior to the introduction of chiropractic by D. D. Palmer.

The concept of the vertebral subluxation is central to chiropractic. It postulates the existence of a class of spinal abnormalities which the chiropractor believes contributes to pain and other bodily disturbances. He seeks to identify such an abnormality and will direct his manual therapy towards attempting to correct it. He regards such an abnormality as causing various kinds of interference within the nervous system. That interference in his view can cause local pain; or may be a factor in producing other disorders. But exactly what is the chiropractic subluxation?¹

Most chiropractors think they have a good understanding of the lesion (subluxation) they treat daily, but proof that very little is known is evidenced by the diverging opinions. The New Zealand Royal Commission investigating chiropractic was forced to say: "Although the precise nature of the biomechanical dysfunction which chiropractors claim to treat has not yet been demonstrated scientifically, and although the precise reasons why spinal manual therapy provides relief have not yet been scientifically explained, chiropractors have reasonable grounds based on clinical evidence for their belief that symptoms of the kind described above can respond beneficially to spinal manual therapy."²

Current definitions generated by chiropractic academic workshops may appear to those outside the profession as avoiding/evading the topic: "A subluxation is the alteration of the normal dynamics, anatomical or physiological relationships of contiguous articular structures. In evaluation of this complex phenomenon, we find that it has, or may have, biomechanical, clinical, radiologic and other manifestations."³

Scott Haldeman is possibly the leading chiropractic academic. He testified before the Royal Commission: "that he preferred not to use the term 'chiropractic subluxation' at all. He said that it was not possible to give a precise but all-embracing definition to the condition which chiropractors

say they treat. He preferred to use the term 'manipulatable lesion.' By that he was in a sense not only side-stepping the issue but also begging the question."⁴

Even though the concept of subluxation is still enigmatic, the fundamental hypotheses of chiropractic can be seen to have been repeatedly stated by medicine over a significant period prior to D. D. Palmer. They include: the concept of spinal dysfunctions/misalignments which were called "subluxations"; Irritation of the nervous system by such subluxations and Correction by hand of subluxations and removal of the symptoms produced by irritation of the nervous system. The literature reveals that these hypotheses progressively developed well before D. D. Palmer.

1746: Biomechanical Hypothesis

Possibly the earliest direct reference to subluxation was made by Joannes Henricus Hieronymi.⁵ Strangely it is more in keeping with current understanding than early chiropractic definitions, as it considers both a decrease in mobility as well as malposition: "subluxation of joints is recognized by lessened motion of the joints, by slight change in the position of the articulating bones and pain . . . most displacements of vertebrae are subluxations rather than luxations."

1820: Biomechanical & Neurological Implications; and Correction of Subluxations.

Edward Harrison, a graduate of Edinburgh University in 1784; became aware of spinal therapies while studying in Paris, and later during practice in Lincolnshire, a county then famed for its numerous bonesetters.⁶ Harrison, in his 1820 article, used the word subluxation in the same sense as did early chiropractors.⁷ He wrote:

A small irregularity in the height and disposition of some particular vertebrae is perceptible, on examination, in most delicate females. This disorderly arrangement and disposition of the com-

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ponent parts of the spinal column, though hitherto overlooked and wholly neglected, are, I am persuaded, of great consequence to future health. The effects of this subluxation, not being distinguishable by the symptoms, have never been traced to their origin in the spine. A very slight and partial compression of the cord, or some of its nerves, will disturb the organs to which they run. If we admit the operation of this cause upon all the vertebrae of the neck, back, and loins, in different persons, we shall be at no loss to account for the almost infinite variety and endless complication of nervous symptoms which harass many individuals through life, and baffle the most eminent of the faculty. When we take into account the number, the size and the distribution of the spinal nerves among the viscera and muscles, we are led to conclude that scarcely a complaint can arise in which they do not participate. In recent cases these subluxations are easily replaced: parents will therefore best consult the health and comfort of their children by frequently examining the spinal column, and taking the earliest opportunity of counteracting its defects.

Having recognized subluxations, he then criticized the spinal treatment at that time by stating "I think it is extremely defective, because it encourages no trials to replace the luxated vertebrae in their former positions. It therefore leaves the patient in a state of deformity, and, as an unavoidable consequence of it, in bad health. . . . Happily these vertebral dislocations from internal causes may be easily removed in every recent, and in many old cases, so as to leave no traces in the appearance of the back or in the health of the individual."

Harrison also showed considerable foresight in his recognition and descriptions of functional scoliotic deviations due to handedness; secondary compensatory spinal curvatures; and apparent short leg syndromes. He attributed them not to conditions of the hip joint, but to the spinal column. He criticized the use of exercises directed to spinal muscles, as in his opinion "the disorder is situated in the articulating structure below the muscles."

1821: Neurological Implications And Correction of Subluxation.

Harrison⁸ in 1821 continued that "When any of the vertebrae become displaced or too prominent, the patient experiences inconvenience from a local derangement in the nerves of the part. He, in consequence, is tormented with a train of nervous symptoms, which are as obscure in their origin as they are stubborn in their nature: they have therefore been justly denominated the *opprobria medicorum*. A sedulous examination into morbid anatomy . . . enabled us to disclose the latent sources of other ailments formerly concealed in

impenetrable darkness. According to this view of the subject, the obvious indication for the cure of spinal affections consists in restoring the displaced bones to their natural situations, that the spinal cord and nerves, relieved from injurious pressure and disturbance, may be reinstated in their former abilities."

1824: Correction Of Subluxations

Again describing subluxations, Harrison like Hieronymi, included the concept of altered mobility when he wrote:

The articulating extremities are only partially separated, not imperfectly disjoined. . . . the articular motions are imperfectly performed, because the surfaces of the bones do not fully correspond.⁹

Harrison⁹ did not give detailed descriptions of his manipulating methods, but in 1824 in perpetuating a Hippocratic approach described manipulation under traction: "By means of soft leathers surrounding the arms, and connected with the top of the couch, and other leathers attached to the ankles, which are fixed to the machine, almost any degree of stretching may be safely resorted to, by turning the roller of the machine, provided the force be gradually increased. The prominent vertebrae and ribs were then pressed, and driven in the direction of their natural situations, with an instrument held in the right hand. . . . I formerly used my thumbs for pressure; but, finding the other contrivance much more powerful and easier to be borne, I have for a long time given it preference."

The technique, essentially the same as that of Calot, is illustrated in D. D. Palmer's book.¹⁰ Chiropractors credit D. D. Palmer with being the first to use the spinous and transverse processes as levers during manipulation, possibly on the basis of his own claim: "I am not the first person to replace subluxated vertebrae . . . I do claim however to be the first to replace displaced vertebrae by using the spinous and transverse processes as levers with which to rack subluxated vertebrae into normal position,"¹¹ and commenting on the methods of others, to distinguish his method D. D. Palmer wrote: "Calot and Chipault had not thot of using the spinous and transverse processes as levers by which to rack displaced vertebrae into their normal position."¹²

D. D. Palmer, probably unknowingly, was mistaken in this assertion. Harrison, of whose work he was probably unaware, did exactly that, as described by Little in 1868: "Dr. Harrison, a well known practitioner thirty years ago, adopted a peculiar means of endeavoring to press the rotate spinous and transverse processes into a more favorable position."¹³

1828-1843 "Spinal Irritation"

1828: Brown¹⁴ wrote: ". . . as it consists, perhaps, in a state of increased irritability in some of the spinal nerves,

may we name it spinal irritation. The immediate cause of the pain is spasm of one or other of the muscles arranged along the spine, altering the position of the vertebrae, or otherwise compressing the nerves as they issue from the spinal marrow. . . . When it is allowed to remain for any considerable length of time, it often produces nervous complaints and general bad health: and, of course, it becomes infinitely more unmanageable. . . . instead of being local or strictly confined to one spot, extends to other parts of the spine, or even to distant organs.

"The symptoms attending a complaint of this description will be quite influenced by the portion of the spine which is affected, since the nerves have different distributions and functions, according to their origin. . . . when the affection of the spinal nerves is situated about the middle of the lumbar vertebrae, it is apt to occasion severe pain in some part of the abdomen. . . . at last it was ascertained that there was marked pain about the middle of the lumbar vertebrae, and that when this part was pressed, the uneasiness extends forwards, exactly to the affected part of the abdomen. . . . when pressure is made on it, about the 7th or 8th dorsal vertebra, she finds that the uneasy sensation shoots forward exactly to the affected part of the breast. She had not paid any attention to this tender part of her spine; indeed she had no idea there was anything faulty there, till her attention was called to it by the examination."

Brown directed his therapy to the spine (not manipulation) with good responses in a few days. After Brown coined the term "spinal irritation" a plethora of complaints were attributed to this cause, and tenderness of the appropriate vertebra "clinched" the diagnosis.

1834: D. D. Palmer was aware of the concept of "spinal irritation" as in his book he described a work published in 1834 by William and Daniel Griffin, who were physicians of London and Edinburgh. They had referred to 148 cases that "were analyzed, showing the relation of certain symptoms to definite spinal regions. These symptoms were associated with spinal tenderness in fixed regions. They concluded that the tenderness in question was either primary in the spinal cord or secondary to visceral or other diseases. The Griffin brothers queried as follows: We should like to learn why pressure on a particular vertebra increases, or excites, the disease about which we are consulted, why it at one time excites headache or croup or sickness of the stomach. Why, in some instances, any of these complaints may be called up at will by touching a corresponding point of the spinal chain?"¹⁵

1835: In writing about the spine as a cause of "spinal irritation" of the nervous system Torbet wrote about conditions simulating acute inflammatory diseases: "That these cases depended on irritation of the great nervous centres I think there can be no doubt. In the second case the occurrence of the injury to the spine makes the proof almost direct, while in the first case the eventual relief which followed from meas-

ures directed to the spine, renders the proof nearly as satisfactory. That the morbid irritation, whatever it may be, does actually shift from one point of the spinal system, producing in these shiftings corresponding symptoms."¹⁶

1839: John H. Griscom, M.D. discussed "spinal irritation" and explained that "nerves are frequently irritated at the level of their exit, and that the effects are manifested either wholly or partially as common disorders of the organs supplied by the affected nerves . . . the spinal nerves are in this manner, either wholly or partially involved in the production of the appearances of many common diseases."¹⁷

1843: J. Evans Riadore M.D., a Fellow of the Royal College of Surgeons in England wrote: "Every organ and muscle in the body is dependent, more or less upon nerves. . . . one or two of the vertebrae may be pressing injuriously upon either the anterior or the posterior root of some nerve. . . . When one vertebra forms a slight exception in the regularity of the spinal line, either by height or distance from its fellows, a serious train of nervous symptoms may supervene. . . . If any organ is deficiently supplied with nervous energy or blood, its function is immediately, and sooner or later its structure becomes deranged. . . . If the digestive organs become functionally or organically deranged from such a cause (i.e. spinal irritation) at the roots emerging from the sixth to eighth dorsal ganglia recumbancy in addition to manipulatia is often necessary. . . ."¹⁸

Riadore practiced spinal manipulation and complained bitterly about the failure of physicians to examine their patients' spines, where the suspected cause of the trouble was to be found.

1831: Anatomical Basis For Subluxation

A memorandum submitted by a group of medical men to the Massachusetts's Legislature in 1831 gave an anatomical basis for the subluxation and stated: "Dissection has enabled the anatomist to follow the nerves . . . into and through the spinal marrow, and other large but remote masses of nervous matter. This has suggested to the physician the truly philosophical remedy for the painful afflictions of these regions, produced by disordered nerves: viz. to apply remedies to the back—the less obvious but the true seat of the disease—instead of to the immediate locality of the pain. Remedies thus applied have had the happiest effects, and afford new and striking illustrations of the necessity of anatomy to the successful practice of medicine."¹⁹

1871: Adhesions, ligamentous contracture and loss of passive motion.

Wharton P. Hood, MD, MRCS, after learning from the eminent bonesetter Richard Hutton, wrote about the manipulatable lesion, "On examination some spot will be found,

often very limited in extent, at which pain is produced by pressure, and it will be from this spot that the pain of movement radiates . . . they resist passive motion with a sort of passive resistance, as if the joints were restrained by ligamentous or strong fibrous tissue. Possibly in some cases, the proper ligaments may become contracted or rigid, or adherent to neighbouring parts; in others external or internal adventitious fibrous bands may be formed; in others, muscles may have undergone shortening. Again effusion may have solidified and thus movement be impaired. . . . In all, however, the impediment to motion becomes a source of pain when motion is attempted. What has been called bone setting may be defined as the art of overcoming by sudden flexion and extension, any impediments to the free motion of joints."²⁰

1895: Chiropractic

D. D. Palmer, with remarkable insight considering the state of knowledge of the nervous system at the time, attempted to explain the subluxation as an entity which disturbs normal function (homeostasis), for which he used the word "tone". He combined the current knowledge of neuroanatomy, with the concept of the nerve impulse as an electrical, vibrational wave, which could be altered by distortion of nerves, from minor misalignments of articulating surfaces of joints. His correction of subluxations was therefore aimed at restoring homeostasis.

The relationships existing between bones and nerves are so nicely adjusted that any one of the 200 bones, more especially those of the vertebral column, cannot be displaced ever so little without

impinging upon adjacent nerves. Pressure on nerves excites, agitates, creates an excess of molecular vibration. . . . Nerve tension determines the velocity of the impulses transmitted. Vital energy is expressed at the peripheral nerve endings. The momentum, the quantity of motion received thru vibration (the amount of vibration is determined by tension), determines the amount of energy. Subluxations are corrected for the purpose of permitting the re-creation of all normal cyclic currents through nerves that were formerly not permitted to be transmitted, thru impingement. . . .²¹

CONCLUSION

The fundamental hypotheses of chiropractic had been repeatedly stated in the medical literature well before the birth of D. D. Palmer who originated chiropractic. A systematic development of concepts pertinent to modern day chiropractic took place over a period of 240 years, rather than some 90 years since the first purposeful manipulation by D. D. Palmer, in 1895.

Biomechanical concepts of subluxation existed as early as 1746. Progressively neurological concepts of disease and illness were added which extended to include the whole body.

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