

Manipulative Therapy: A Historical Perspective from Ancient Times to the Modern Era

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This brief survey of manipulative therapy will serve as an introduction to the authoritative presentations to follow. For the sake of conservation of time, and in light of an abundant history, I shall skim the ancient and medieval periods, and concentrate on more recent events.¹ Yet the classical texts surely deserve further attention if only to decide whether the Greeks merely attempted to reposition vertebrae displaced through violence, or whether they actually performed manipulations of slightly luxated vertebrae as therapy for a wide variety of dysfunctions. The latter opinion, which transforms chiropractic as enunciated by D. D. Palmer into a literal rediscovery of ancient practice, has been advanced by Dr. Kleanthes A. Ligeros of Greece in a book published in 1937.² I hardly dare argue with a native, but Ligeros does seem to have read more into the Hippocratic writings than is obvious to the outsider using translations.

In conventional interpretation, Hippocrates distinguished between incurable humpback due to disease and posterior curvature caused by a fall, for which reduction though rarely successful might be attempted.³ However, he disapproved of the popular method of succussion head down from a ladder, not because this treatment seemed unnatural but because it had been abused: "It is disgraceful in any art, and especially in medicine, to make parade of much trouble, display, and talk, and then do no good." Instead he recommended combined extension and pressure, exerted on the patient lying prone on a wooden bed. To quote:

Such extension would do no great harm, if well arranged, unless one deliberately wanted to do harm. The physician, or an assistant who is strong and not untrained, should put the palm of his hand on the hump, and the palm of the other on that, to reduce it forcibly, taking into consideration whether the reduction should naturally be made straight downwards, or towards the head, or towards the hip. This reduction method is also very harmless; indeed, it will do no harm even if one sits on the hump while extension is applied, and makes succussion by raising himself; nay, there is nothing against putting one's foot on the hump, and making gentle succussion by bringing one's weight upon it.⁴

Even more effective was the use of a piece of wood as a lever with which to apply pressure on the hump beneath.

Later authors such as Galen, Celisus, and Oribasius, gave essentially the same advice, but, by the sixth century A.D., spinal curvature was also being treated by means of open wounds or eschars, induced on either side of the deformity.⁵ The treatment of pain by invoking local suppuration was favored by Arab physicians and, as we shall see later, again used extensively in the late 18th century. Such treatment was compatible with the humoral theory of disease, but whether in this

instance its use was an Arab innovation, or one derived from Hellenistic sources, I have been unable to discover. Certainly the extension method was not lost, for it was again expounded at length by Albucasis in the 10th or 11th century, and by Guy de Chauliac in the 14th century.⁶

Luxations of the spine were discussed in some detail by the great French barber-surgeon, Ambroise Paré. He was not at all in favor of tying patients to ladders and dropping them from roof tops, but otherwise his methods of restoration differed little from those described by the ancients.⁷ What he added was the steel corset to support the back after manipulation, and the apparently novel suggestion that much chronic deformity was caused by faulty posture during childhood rather than by luxation secondary to injury. The same theme was expounded two centuries later by Nicholas André who, as explained by Bick, synthesized the term "orthopaedia" "from the Greek roots *orthos* (straight) and *paidos* (child), to express his belief in the theory that many of the deformities of adolescence and adult life originate in childhood."⁸ Curvature of the spine could be avoided by attention to posture and exercise during youth. Once deformity had occurred André, like many of his contemporaries, recommended rest, head suspension, and the wearing of corsets whenever ambulant.⁹

Following Percival Pott's pronouncement that caries of the spine was far commoner among young children than ever previously suspected, many physicians went to the extreme of diagnosing all cases of early scoliosis or lordosis as due to scrofula.¹⁰ These they treated by rest and by creating local discharge through the use of issues, while condemning extension and manipulation as both useless and dangerous.

By the beginning of the 19th century, a plethora of literature existed on disorders of the spine, but absolutely no consensus as to differential diagnosis and treatment. Some, including Shaw, and Dods, thought that muscle weakness was the prime cause of deformity, and therefore recommended either complete rest or active exercise.¹¹ Others implicated the vertebrae, as being carious or simply too soft, and treated everyone with rest and induced local ulceration. Each group produced numerous case histories to support its contentions, and all indulged in polemics to silence any opposition.¹²

Even in this atmosphere some still prescribed manipulation, for example Dr. Edward Harrison, a

graduate of Edinburgh University in 1784. His career was unusual, even when judged by the standards of his time.¹³ In the late 18th century, he studied in Paris, a city which apparently then abounded with institutions for the cure of spinal distortion. Many methods were used, including traction and kneading of the hump, much to the horror of scrofula conscious British critics.¹⁴ Later Harrison spent a couple of decades as medical practitioner in Lincolnshire, a county then famed for its numerous bone-setters and empirics.¹⁵ All in all he had plenty of opportunity to learn the art of spinal manipulation.

In 1817 Harrison came to London. In 1821 he began writing a series of articles for the *London Medical and Physical Journal* entitled: "Observations respecting the Nature and Origin of the common Species of Disorders of the Spine: with Critical Remarks on the Opinions of former Writers on this Disease." Having delivered the necessary attack on the views of Pott, Harrison expressed his own as follows:

According to this view of the subject, we must direct our attention to some other tissue to discover the true cause of spinal complaints; and I am of opinion that we shall find it in the connecting ligaments, "which seem to have lost part of their power of holding the bones together." These get relaxed, and suffer a single vertebra to become slightly displaced. The column now losing its natural firmness, other bones begin to press unduly upon the surrounding ligaments; they, in turn, get relaxed and elongated, by which the dislocation is increased and the distortion permanently established. The direction becomes lateral, anterior, or posterior, according to circumstances; but the malady has in every instance the same origin, and requires the same mode of cure.¹⁶

Thus, the mischief did not originate in the vertebrae, as taught by Pott, nor in the cartilage as suggested by others, but in the ligaments. For this reason people often recovered, an impossible outcome if the more serious pathology were indeed present. Harrison was full of optimism for the prospects in early cases, so long as his system was employed. Usually he was none too clear about the

actual treatment applied but, on one occasion, gave the following account:

The patient, being placed upon a couch, as usual, had her back and chest well rubbed with an emollient liniment for more than an hour, while the spine was stretched in the machine formerly referred to. It is constructed of steel, upon the principle of the windlass of a ship, and fixed to the bottom of the crib. 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 only for pressure; but, finding the other contrivance much more powerful and easier to be borne, I have for a long time given it the preference. A firm bandage was afterwards fastened round the chest, to prevent the bones from returning. This bandage being adjusted, she was laid flat upon the back, and directed to remain constantly in the same position.¹⁷

These manipulations were repeated daily for about 3 weeks, by which time, according to our author, "the contour of the spine was entirely restored."

In 1827 Harrison wrote a popular book on the subject.¹⁸ On the whole this met with professional disapproval mainly, it would seem, because the doctrine of vertebral luxation and consequent need for manipulation was taboo. The *Medico-Chirurgical Review* began by expressing veiled criticism: "God forbid that we should impute to Dr. Harrison, or to any other doctor, the remotest idea of charlatannerie; but we do believe that it would be difficult to devise a system better adapted to the practice of that art, than the spinal pathology here delineated."¹⁹ It ended its review article much more expressively:

After this specimen of the "bolder flight" which Dr. Harrison has taken from the low ranks of his brethren, to the GENERAL READER we must lay down the

pen. We are positively ashamed (if it will be believed that a REVIEWER can have any sense of shame) to record such a passage from the writings of a physician of the present period, on our pages. But the above extract will characterize the book under review, better than any thing which we would say. The pathology is erroneous—the practice is, for the most part, concealed—and the plates are more calculated to frighten the GENERAL READER than to convey any information to the MEDICAL PRACTITIONER.

Two added factors probably contributed to official disapproval of Harrison. First, he had developed a lucrative practice in London, having established a clinic favored by many English dignitaries and even by the Queen.²⁰ Second, since 1804, while in practice in Lincolnshire, he had become leader of a movement for medical reform, particularly reform of the antique statutes of the Royal College of Physicians which prevented anyone not a graduate of Oxford or Cambridge from practicing medicine within seven miles of the city of London. A low-grade battle rumbled on until 1827, when the College summoned Harrison to give an account of himself and obtain the required license. This he refused to do, so the College prosecuted him for illegal practice. The case came to court in 1828; Harrison defended himself on the ground that he had been practicing surgery not medicine and, although this was patently untrue, the jury found in his favor. From then on he worked unmolested in London until his death in 1838.²¹

For such reasons Harrison was probably the most notorious British physician to advocate and use manipulation in the treatment of spinal disease. But he was not the only one. In 1824 Andrew Dods had published his *Pathological Observations on the Rotated or Contorted Spine, etc.*, in which he argued that the immediate cause of deformity was "a peculiar affection of the muscles of the back" whose "perverted action" led to rotation or twisting of the spine.²² Treatment was mainly prophylactic—plenty of exercise for children of both sexes—but once the condition was established, both friction and manipulation had a part in treatment.

In his popular work *On Spinal Weakness and Spinal Curvatures*, published in 1868, W. J. Little favored both Dods' theory of spinal rotation and

the proposition that manipulation had a place in therapy. Since Little was an important figure among mid-century London orthopedists, his opinion will be quoted at length:

During recumbency, manipulations may with great advantage be resorted to. Very superficial observation of the beneficial effects of attempting to press the spinal column into a straighter direction will, unless the patient be much advanced in life, encourage the patient and her friends to persevere in a proper and sedulous use of this means.

The person employed to effect these manipulations needs to be expressly taught in what manner they can be most advantageously carried out. The surgeon can impart the necessary instruction by showing where the pressure and counter-pressure upon the several curves require to be made. Dr. Harrison, a well-known practitioner thirty years ago, adopted a peculiar means of endeavouring to press the rotated spinous and transverse processes into a more favorable position. The instrument used by him resembled that which is sometimes employed to compress the subclavian artery above the clavicle. Although the attempt to effect the object he had in view appears at first sight futile, the reiterated pressure upon particularly projecting parts of vertebrae is fairly indicated, and is not unattended by benefit.²³

Manipulation was one of a battery of therapies advocated by Little for lateral curvatures of the spine. He differentiated this condition from the more serious angular curvatures, caused by necrosis, caries, inflammation or rheumatism of the vertebrae, which were to be treated only by rest or fusion.

Dods had at least one other disciple, a Mrs. Godfrey of Liverpool, who carried on a business originated by her husband, a "medical man." The fruits of her spinal practice, and her faith in divine providence, were expressed in a book first published in 1851.²⁴ The treatment consisted not of "friction," nor of "shampooing," but of manipulation, although "not such as that which has been previously performed." Rather, careful manipulation was used to prepare the muscles for special

exercises which she then imposed. She believed that spinal curvature was often caused by slight displacements of various parts of the body, "which were produced, in some instances, by convulsions in infancy, and in others through sudden jerks and falls."²⁵ *The British and Foreign Medico-Chirurgical Review* did not think much of her explanations, but at least reviewed her book, in company with three others on deformities written by two Fellows and one Member of the Royal College of Surgeons.²⁶

Such recognition was not usually given to traditional bone-setters, but, by the last third of the 19th century, this attitude was beginning to change. Early in 1867, the *British Medical Journal* reported James Paget's lecture: "On the cases that bone-setters cure," a lecture in which he warned his professional listeners that they should pay attention to the activities of empirics, if only to avoid losing patients.²⁷ More complimentary to bone-setting was a series of articles on the subject written by Wharton Hood for the *Lancet* of 1871.²⁸ This orthopedist confessed himself most impressed by the skills of a famous bone-setter, Mr. Hutton, with whom he had actually worked as an assistant, "I was astonished," he wrote, "and often no less mortified, at the number and variety of instances in which the manipulations I have endeavoured to describe were followed by almost immediate cure."²⁹ These articles were followed by a popular book on the subject, and Hood's persistence seems to have paid off, at least to the extent that a discussion on bone-setting was held at the fiftieth annual meeting of the British Medical Association in 1882.³⁰

However, I must hasten to add that bone-setting was not exclusively practiced in the British Isles. In the United States, by the mid-19th century, the male members of the Sweet family of Rhode Island and Connecticut were reputed to possess a hereditary skill in bone-setting. According to a skeptic, "the beginning of this strange delusion happened in South Kingstown, in the State of Rhode Island, more than one hundred years ago."³¹ More about the family and its abilities may be learned from *An Essay on the Science of Bone Setting*, published in 1829.³² Here the author, Waterman Sweet, set out to prove that surgery and anatomy were intuitive sciences only intelligible to those who had a talent for the profession, and were divinely endowed with sufficient ability and the capacity for hard work. His own mastery of the art was

illustrated by numerous case histories of successful manipulations of peripheral joints. Apparently he had a thriving practice in spite of "evil reports" circulated by doctors and others. As mentioned above, the family was still doing well in the mid-19th century, but I have not been able to follow its fortunes further.

Before concluding this survey, reference should be made to other early 19th century concepts pertinent to the later emergence of osteopathy and chiropractic. A novel development was the generation of intense interest in functions of the spinal cord. Since Galenic times, this structure had been considered merely as a conduit for nerves linking the brain with the periphery. But following the enunciation of the Bell-Magendie law, and of Marshall Hall's theory of reflex action, pathology of the spinal cord was suddenly heralded as the obvious cause of much disease of previously unknown origin. To the fore came a new clinical entity, "spinal irritation," which embraced a variety of nervous symptoms, so long as one diagnostic sign could be elicited—tenderness on pressure over the vertebral spines. Excellent accounts on the history of the growth of this idea have been given by the American neurologist William Hammond in his 1871 *Treatise on Diseases of the Nervous System*, and, more recently, by the historian and neurologist, Francis Schiller, in an article entitled: "Spinal Irritation and Osteopathy."³³

In 1828 Dr. Thomas Brown of Glasgow coined the term "spinal irritation," although he was not the first to suppose that subacute disease of the cord could precipitate a plethora of nervous complaints. From then onwards this diagnosis became very fashionable, to be used by such prominent physicians as Cruveilhier of Paris and Corrigan of Dublin.³⁴ Indeed the latter considered the discovery to be "the greatest improvement in practical medicine" that had taken place within his recollection. "Other improvements may have been more brilliant, but there has been none so useful." Nor did it take long before "spinal irritation" found its way across the Atlantic. Beginning in 1832 with an article by Dr. Isaac Parrish of Philadelphia, *The American Journal of Medical Sciences* repeatedly carried reports on diagnostic progress both in this country and in Europe.³⁵

Taken *in toto* it would appear that there were few morbid phenomena which could not result from irritation of the spinal marrow. The following is a list of possible manifestations: mania, vertigo,

amblyopia, nervous fevers, cough, dyspnoea, pleuritis, colic, vomiting, disorders of menstruation, hysteria, asthma and diabetes.³⁶ In any case the diagnosis could be clinched by finding tenderness of the appropriate vertebrae, i.e. those from which emerged the spinal nerves, or beneath which lay the sympathetic ganglia, whose dysfunction might reasonably account for the prevailing symptoms.

The treatment was to apply irritants, such as blisters, leeches, and cauteries, to the tender dorsal point. Today we may be amazed that such heroic measures could still be advocated in the eighteen thirties and forties, until we remember that the humoral theory of disease still prevailed.³⁷ Given this viewpoint the aim was to confine the disease by local depletion and blistering, and so effect a cure. Even harsher measures were at hand should general inflammation and fever appear, but, according to contemporary reports, local irritants were usually very successful, leading to speedy and complete recoveries.

According to Francis Schiller, Andrew Taylor Still was probably influenced by the doctrine of spinal irritation which continued to have eminent supporters until the end of the century.³⁸ The founder of osteopathy was probably revolted by the style of therapy described above, which fortunately was rapidly becoming obsolete by mid-century. In addition, the pathology of spinal irritation was pertinent, especially as expounded by William Hammond in 1871. This neurologist attributed the symptoms to anemia of the posterior columns of the spinal cord, and proposed as treatment the application of direct galvanic current, with the negative pole at a point above the seat of pain, and the positive at another, an equal distance below.³⁹

It can therefore be argued that at their genesis, both the theory and the practice of osteopathy and chiropractic depended upon concepts acceptable to many eminent 19th century medical practitioners. This fact has become blurred since such doctrines, i.e. spinal irritation, have been abandoned by medical scientists. If it is remembered that a century ago the cord was visualized as the center for the multiplicity of functions, and even by some psychologists as the locus of a "spinal soul," one can regard the beginnings of osteopathy and chiropractic as legitimate offsprings of contemporary thought.⁴⁰

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