

# Osteopathic treatment by injection: A comparison of osteopathic manipulative treatment and neural therapy

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## Introduction

Among medical systems, a major distinction of osteopathy has been its emphasis on “finding health” rather than treating disease. Although A. T. Still introduced this idea in the late 1800s it has a decidedly modern feel to it, and in the 21st Century may be finally coming of age.

Central to Still’s concept of health was the notion of unobstructed flow of blood to all tissues of the body, providing nourishment and elimination of waste products. The osteopath’s task was to use his knowledge of anatomy and physiology to find the obstruction and then to remove it.

To Still, obstruction resulted from abnormal mechanics, and treatment of abnormal mechanics (the osteopathic lesion) was the logical solution to problems of health. Over the next hundred years these principles were developed and refined to build a complex theory and practice of osteopathic manipulative treatment (OMT).

Mid-way through the twentieth century, new discoveries in neurophysiology forced a major rethinking of the nature of the osteopathic lesion. The osteopathic lesion was found to be more than just mechanical dys-

function; it was also a manifestation of neurological input from mechanoreceptors in the connective tissues, from sensors in the skin and vis-

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cera, from autonomic ganglia, from facilitated segments of the spinal cord, and from higher centers of the central nervous system, including the cerebral cortex.

Although osteopathic theory was enriched by these discoveries, OMT was only minimally affected. The major therapeutic tool of osteopathy has continued to be manipulation and Still’s mechanical model has proven to be more than adequate in this regard. However, if one considers the philosophical ideas behind osteopa-

thy, it may be that the lack of application of this new scientific knowledge in new ways represents a missed opportunity in the development of osteopathy.

No one has contributed more to the neurophysiological understanding of osteopathy than Irvin Korr. Not only did he conduct important original research, but he also interpreted for clinicians the significance of much of the then existing science. His 1948 paper, “The emerging concept of the osteopathic lesion”<sup>1</sup>, contains a masterful review of the classical literature on this subject, with many potential clinical pearls. Among these pearls are reports (from several authors) that the vicious cycle of muscle spasm - neurological facilitation - muscle spasm can be broken not only by manipulation, but also by appropriately directed injections of procaine.<sup>2-8</sup>

Korr’s intention in this paper was not to expand the scope of osteopathic practice but rather to help explain already observed clinical phenomena. One might wonder however why these observations were not picked up and explored by osteopathic clinicians of the time. Their albeit intuitive understanding of the autonomic nervous system and the importance

of the extracellular space placed them in the best position possible to benefit from this new scientific knowledge. Nevertheless, the opportunity was passed over. Only sporadic and piecemeal attempts to use procaine were made by (mostly allopathic) physicians in North America.

## History of Neural Therapy

In the meantime, on another continent, and in another language, a small group of German clinicians were also exploring applications of existing neurophysiological knowledge. They had no knowledge of osteopathy and were coming from quite a different direction. They were aware of the same literature that Korr had used to develop his “emerging concept of the osteopathic lesion” but were using it to help explain some remarkable clinical properties that they had discovered regarding procaine.

Procaine was discovered in 1905 by Einhorn. It, (like cocaine), was used mainly as a local anesthetic, but was also used by some for local infiltration of “neuralgic” and “rheumatic” conditions with some success. In 1906, Vishnevski reported that local infiltration could reduce inflammation. Russian, German, French, and British physicians experimented with injections into nerves and autonomic ganglia during the first decades of the 1900s, but only in the 1920s was it discovered that procaine could have effects extending far beyond the sight of injection.<sup>9</sup>

Through a series of serendipitous events, two dentist-physician brothers, Ferdinand and Walter Huneke, discovered that intravenous procaine could cure migraine. They later discovered that intracutaneous injections “segmental therapy” into “Head’s Zones” could treat the visceral conditions to which they corresponded. In 1940, Ferdinand Huneke observed

the first “lightning reaction”, a sudden, dramatic extrasegmental response to a local procaine injection. (These may occur with injection of an “interference field”, or focal area of autonomic nervous system dysfunction. Common sights of interference fields are scars, autonomic ganglia, the gingiva of a diseased tooth, or the Head Zone of a visceral organ. Interference fields are not usually symptomatic locally but measurable changes in electrophysiological properties, (e.g. skin conductivity resistance) are always present.)

The Huneke brothers and others developed these discoveries into a whole system of medicine, which they called “neural therapy”. Its theory centers on the physiology of the autonomic nervous system; its practice is identification of focal areas of electrophysiological disturbance; and its treatment is injections of procaine.

## Interference Fields

Success in treatment by neural therapy depends on accurate identification of significant interference fields. Interference fields are common, but not all are important. Skill is required in not only finding them but also in finding the “key lesions”. Treating less important interference fields may give temporary or partial results, but cures depend on finding the important ones. This is one of the many similarities of neural therapy and osteopathy.

There are two main methods of detecting interference fields:

- (a) by history
- (b) by autonomic response testing

The most important factor in finding an interference field by history is the relationship between the onset of symptoms and an antecedent event (in the weeks or months before). Typical antecedent events are a surgical op-

eration, a dental procedure or an important organ infection. If these events are accompanied by excessive sympathetic tone (locally or systemically), healing may be impaired<sup>10</sup> and/or an interference field may develop. For example, a mastectomy, or an elective operation during a period of emotional distress is more likely to result in an interference field in the scar than an elective operation with less emotional associations.

The location of an interference field in relation to the symptoms is often not important. It may be near the area of symptomatology or it may be remote. An appendectomy scar may cause chronic headaches; a wisdom tooth scar may cause backache. Recurring pneumonia may be due to an interference field in a lung; unexplained feet pain may be due to hemorrhoids.

Autonomic response testing<sup>11</sup> is a relatively new technique of detecting interference fields developed by Dietrich Klinghardt MD, PhD and Louisa Williams DC. It was their observation that muscle strength testing used in applied kinesiology could be used to assess autonomic nervous system function and to detect interference fields.

In its simplest form, a suspected interference field is touched by the operator’s hand and evidence of an autonomic nervous system response is observed in the patient. The most commonly utilized response is change in strength of an indicator muscle (typically a shoulder flexor muscle with the patient supine). Other responses that may be used include changes in arm or leg length, in primary respiratory impulse rate, in vascular pulse quality, in pupillary size, etc.

## Treatment of interference fields

Treatment is straightforward. A small amount of dilute procaine is injected into the interference field using the finest needle possible. If the

interference field is a somatic dysfunction, injection into the skin over the affected area will suffice. If the interference field is important, there will be an immediate autonomic response (as explained in the previous column). Physicians practiced in cranial osteopathy will detect an immediate “still point” followed by deepened and more relaxed primary respiratory motion. The patient will often feel complete or partial relief immediately (a lightning reaction), or at some time within the first 24 hours. As with manipulative treatment of somatic dysfunction, there will occasionally be adverse reactions.

Response to treatment may occasionally be permanent with just one injection, but more commonly relief lasts for days or a few weeks. With recurrence, the injection is repeated and a longer response may be expected.

The interval between injections increases with time until eventually a cure is obtained.

The above is a best-case scenario. As with OMT, there are many factors that will limit or block response to treatment. These include other more important interference fields, major untreated somatic dysfunction, poor nutrition, toxic processes, emotional blockages, etc. Neural therapy (like OMT) works best in the hands of a skilled physician who takes into account the whole physiology of the patient.

## **Osteopathy and neural therapy compared**

Osteopathy as described by A.T. Still is clearly a medical philosophy. It is a way of seeing that guides the entire approach of the physician to his patient and his medical problems. To twenty-first century eyes the scientific knowledge that Stills had at his disposal was limited, but his philosophy has nevertheless stood the test of time and is as applicable now as ever.

Still had great faith in the body's

own self-regulatory mechanisms and saw their proper functioning as the only path to good health. He did not use the terms homeostasis, feedback loops, and cybernetics, but he would probably have applauded their invention.

He had a passion for anatomy and physiology and felt that the intelligent application of this knowledge was the physician's task. He recognized that the scientific knowledge at his disposal was limited and he often resorted to metaphor. In referring to anatomy he spoke of it as the “alpha and omega, the beginning and the end, of all forms and the laws that give forms, by selection and the association of the elements, kinds, and quantities, to the human body.” One might wonder what he would have thought of the human genome project?

Neural therapy as taught by the Huneke brothers, was not articulated as a medical philosophy. Nevertheless the philosophy is there and in many ways resembles that of osteopathy. In reading the neural therapy literature one cannot fail to notice the preoccupation with anatomy and physiology, and especially electrophysiology. “Syndromes” are spoken of with scorn, and the failure of allopathic medicine to diagnose and deal with ultimate causes is clearly recognized.

The Huneke brothers were first and foremost clinicians. They had keen powers of observation and rediscovered many things that had previously been reported in the literature but forgotten for lack of recognition of their significance. However it was their ability to interpret physical findings in terms of regulatory physiology that enabled them to build the theory of neural therapy.

The Huneke brothers, like Still, faced considerable opposition from the medical establishment for their views. They saw through the financial corruption inherent in symptom-and-drug based medicine and strove

to find a better way. Ferdinand, the older brother was particularly passionate and his outspoken opinions made him many enemies.

Unlike Still, they did not attempt to build a “school” of neural therapy or a separate profession. Their goal was reform of medicine, and although they received little recognition during their lifetimes, they influenced German medicine to the extent that neural therapy is now commonly practiced throughout much of Germany today.

The Huneke brothers and their followers paid little attention to body mechanics. They apparently knew nothing about osteopathy, but occasionally mentioned “chirotherapy”. They saw chirotherapy in a class with physiotherapy, acupuncture, and other physical modalities that “all made use of the reflex pathways of the neurovegetative system by setting up a therapeutic stimulus in the nervous system whose response to this stimulus then releases the healing reaction. Seen in this light, all these therapies can also be considered to be ‘neural therapy’ in the wider sense.”<sup>12</sup>

The “healing reaction” as seen by the Hunekes was a normalization of the total physiology of the extracellular space. This included the electrical properties, the circulation, the chemistry, the respiration, and even the morphology of the cells inhabiting this space. Because autonomic nerve endings in this space float free, the extracellular space has been considered to be “one big synapse”.

The Viennese school of physiologists led by Pischinger called this space the “matrix” and made it their field of study. Their exploration of this area is summarized in a monograph<sup>13</sup> that makes fascinating reading for any osteopathically inclined physician. Still's prophecy could hardly have been more accurate: “I believe that more rich golden

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thoughts will appear to the mind's eye as the study of the fascia is pursued than of any other division of the body."<sup>14</sup>

## “Healing”

The word “healing” can have many meanings, but when used in the context of the subtle, non-specific therapeutic interaction between physician and patient, similar phenomena occur in both osteopathy and neural therapy. It would probably be fair to say that physicians practicing OMT enjoy the intimate contact it allows with their patients. Intimacy permits enhanced communication at many different levels, not least that of a hard-to-describe “energy” which seems to flow from the hands. Patients often report a lightness, mild euphoria and relief from pain as a result of this process. Clinical experience indicates that the physician's agape attitude towards the patient and the patient's reciprocal trust in the physician, play a large part.

Recent physiological experiments involving intentionality and heart, respiratory and brain wave synchronicity (entrainment)<sup>15,16</sup> seem to support at least the possibility that these speculations may be true. Heart rate variability technology<sup>17</sup> is providing an objective tool to show that the autonomic nervous system is the main receptor and processor of this information. This would explain the similar patient responses in OMT and neural therapy.

Neural therapy does not encourage the same physical contact between physician and patient as does OMT, but it does seem to attract physicians with similar attitudes to their patients. They recognize the limitations of allopathic medicine and are willing to step out and search for new solutions to their patients' illnesses. This takes some courage, and also demonstrates an above-average concern for their patients. Patients are aware of this and

respond accordingly.

The Huneke brothers' lightning reaction was singled out by their critics as being a mere placebo phenomenon. To a certain extent the critics may have been right, but not in the way that they thought they were. The lightning reaction is a true physiological event as evidenced by Pischinger's iodometry<sup>18</sup> and other chemical and hematological measurements. But it is likely that the Huneke's strong personalities, their intentionality, and the autonomic nervous system's response are all part of what occurs. What the patient experiences is very close to that which occurs when a major chronic somatic dysfunction is treated by OMT. In both cases the autonomic nervous system is profoundly affected with the physicians' intention likely playing a large part in the outcome.

## Summary

Osteopathy as a philosophy centers around the concept of the body's own ability to heal itself. AT Still's original model was a mechanical one, which saw obstruction of flow of body fluids (especially blood) as the main impediment to good health. OMT has been a logical solution to mechanical problems and has been the mainstay of osteopathic treatment ever since.

At about middle of the twentieth century, new discoveries from neurophysiology revolutionized the understanding of the osteopathic lesion, but had little effect on therapeutics. Research showed that procaine injections could affect the autonomic nervous system in similar ways to OMT. These discoveries from the research field were applied only minimally to osteopathic therapeutics.

At about the same time, German physicians were investigating the therapeutic possibilities of procaine on the autonomic nervous system. They had discovered that foci of au-

tonomic nervous system instability (interference fields) could exist in many areas of the body and were amenable to treatment by procaine. Interference fields have similar if not identical properties to those of somatic dysfunction. Evidence is presented here that a somatic dysfunction is in fact an interference field.

Although not articulated as such, the medical philosophy underlying neural therapy bears strong resemblances to osteopathy. Neural therapy could be said to be another therapeutic tool in the practice of osteopathic medicine. “Head's Zones” refer to the areas of the skin whose sensory properties are affected by disturbance of a particular visceral organ. They do not necessarily lie over the organ. For example, the Head Zone of the liver lies over the right lower costal margin, the right upper shoulder, and the right interscapular area.

Lightening reactions are often accompanied by instant relief of chronic pain, light-headedness, and sometimes euphoria. They are similar, if not identical to the response to osteopathic release of an important chronic somatic dysfunction, e.g. a sutural compression.

Unfortunately, for English-only speakers, the original literature pertaining to neural therapy is almost entirely in German and Russian. However, an excellent summary of this material is available in an English translation of the major neural therapy textbook: (See endnote 9). This book is now out of print by the original publisher, but good quality copies may be obtained from a small US publisher, Medicine Biologica (503) 287-6775. Another useful resource is a translation of a monograph on the physiology of the extracellular space by Pischinger A. “Matrix and Matrix Regulation,” (See endnote 13)

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