Traditional Osteopathy and the General Osteopathic Treatment: A Historical Concept and a Modern Application

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ORIGINAL RESEARCH

Abstract

Historically, Andrew Taylor Still, MD, DO, differentiated osteopathic medicine from allopathic medicine with its unique approach to treatment using manual therapy. Those treatments, known as osteopathic manipulative treatment (OMT), are currently used to treat somatic dysfunction. The Educational Council on Osteopathic Principles (ECOP) includes different treatment methods, such as muscle energy, high-velocity, low-amplitude, Still techniques, myofascial release, and counterstrain, amongst others, under the category of OMT. Conversely, osteopathic practitioners outside the USA, mostly from Europe, use some techniques that are not necessarily documented as OMT by the ECOP. This is the case of the General Osteopathic Treatment (GOT). The GOT found its origin with Dr. Still and was promoted, amongst his contemporaries, by Dr. John Martin Littlejohn, DO, who founded the British School of Osteopathy in London. The general treatment, based on a strong biomechanical background, was further spread in Europe by John Wernham, DO, a British osteopath and one of Littlejohn's students. Wernham developed and taught the GOT in its original form based on the principles and philosophy of osteopathic medicine. The goals of this article are to give an historical perspective of the GOT, to describe the foundation and concepts behind it, and to provide a review of the scientific literature of this treatment approach. The GOT can be used to diagnose and directly treat somatic dysfunction using the TART principle in a clinical setting. Besides the recognized contra-indications of treating somatic dysfunction, there are no clear scientifically published findings of contraindications for the use of the GOT. Like other OMTs, the GOT needs more scientific evidence to better understand its clinical applications.

"The whole is greater than the sum of its parts" – Aristotle

Introduction

John Martin Littlejohn, PhD, DD, LLd, DO, MD (1865-1947; from Glasgow, Scotland), one of the earliest and most prolific students of Andrew Taylor Still, defined osteopathy as follows:

> *A system or science of healing that uses the natural resources of the body in the corrective field for the adjustment of structural conditions, to stimulate the proper preparation and distribution of the fluids and forces of the body and to promote cooperation and harmony inside the body as a mechanism.*[1]

He described the relationships between physiology and the physical body very early on by establishing the phenomena of physiological physics, or the mechano-physiological relationship of the body, connecting the tangible and intangible, the visible and the invisible.

According to ECOP and the American Association of Colleges of Osteopathic Medicine (AACOM) *Glossary of Osteopathic Terminology*, osteopathic manipulative medicine (OMM) is defined as "the application of osteopathic philosophy, structural diagnosis and use of the osteopathic manual treatment (OMT) in the diagnosis and management of the patient presenting somatic dysfunction."[2]

Osteopathic manual treatment and its associated techniques are commonly used to treat a patients' somatic dysfunction related to musculoskeletal disorders.[2] ECOP defines a somatic dysfunction as an impairment or altered function of the somatic system, which includes skeletal, arthrodial, and myofascial structures, and related vascular, lymphatic, and neural elements. The criteria for assessing somatic dysfunction relates to tissue "Texture abnormality," "Asym-

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metry," "Restriction" of motion and "Tenderness" (TART)[3]. However, osteopathy is more representative than the treatment of somatic dysfunction. Indeed, osteopathy was described as a science, an art, and a means to convert physical action into its physiological equivalent,.[1] as shown in several earlier and more recent studies.[4, 5] Osteopaths may apply one or more techniques when delivering treatment. A recent survey on the preferred OMT used by a physician identified the following subcategories: high velocity low amplitude (HVLA), thrust technique, muscle energy technique, strain/counter strain, articulatory, lymphatic technique, facilitated positional release, fasciae ligamentous release, cranial treatment, soft tissue, visceral technique, Still techniques, myofascial/neuromuscular release, and functional technique.[6] Depending on their use, these techniques can also be classified as direct or indirect. Some osteopathic techniques from Europe, such as Specific Adjustment Technique (SAT) presented by Thomas G. Dummer, DO, and the General Osteopathic Treatment (GOT), preserved and enriched by John Wernham, DO, are not listed in that Glossary and are mainly used amongst the osteopathic practitioners abroad.[7, 8]

The aim of this paper is to shed light on the GOT by providing a brief history, the concept and the underlying principles, a description of the techniques involved, and the scientific evidence supporting its use. Revisiting the osteopathic literature could help contemporary osteopaths further develop their scope of practice and lead new research in this traditional field of osteopathic medicine.[9] The GOT may be one osteopathic management strategy that's worth rediscovering and possibly be considered as a recognized OMT by the ECOP.

History

In 1897, John Martin Littlejohn was introduced to osteopathic medicine by Andrew Taylor Still, MD, DO, and in 1899, he was named dean at the American School of Osteopathy (ASO) in Missouri. While he was there, he introduced X-rays, taught physiology, and opened a surgical hospital. Late in 1899, Littlejohn was dismissed from the ASO, possibly because of what was considered at the time as him having a "too medical" opinion,[10] and replaced by Arthur Grant Hildreth, DO, one of the influent legislator for Osteopathic Medicine and a founder of the first osteopathic college in Kirksville, MO.[11] The following year, living the middle west, Littlejohn and his two brothers opened the American School of Osteopathic Medicine and Surgery in Chicago, where he worked for a few years until he went back to Great Britain in 1913. In 1917, the year of Still's death, Littlejohn, bringing its principles and philosophy with him, established the British School of Osteopathy (BSO) in London, the first osteopathic institution in Europe.[12]It was said that Still had a more anatomic vision of osteopathy, while Littlejohn insisted merely on its physiological aspect.[13] These conflicting philosophies have been reported as a source of discord between them and remain a subject for debate, although Still and Littlejohn both explained to students that they have to be a "Master of mechanics," a "Master of physiology" and a "Master of anatomy"[14].

Still and Littlejohn philosophy and principles of osteopathy influenced John Wernham's way of understanding and practicing osteopathy.[15] Wernham started studying osteopathy in 1928 and graduated from the BSO in 1947 under the guidance of Littlejohn, dean of the BSO at that time. For over 70 years, he studied, lectured and practiced in accordance with Littlejohn's teaching. He founded the Maidstone College of Osteopathy in 1985, devoted entirely to the teaching of Littlejohn (the College was renamed the John Wernham College of Classical Osteopathy in 1996 in honor of its founder)[16]. Writing about Littlejohn, Wernham states: "The supreme scholarship and profundity of his work did not render Littlejohn popular. Presenting his case has been a turbulent experience. But there is evidence that Classical Osteopathy is here to stay and that nothing can prevent its progress and a permanent place in this present and in the future."[17]

John Wernham is considered to be the father of the Body Adjustment (BA). The BA is an essential integrative method of treatment which represents the Osteopathic General Treatment's concept of Littlejohn, commonly named the General Osteopathic Treatment (GOT) by European osteopaths. However, in the United States, the teaching of Wernham about Classical Osteopathy is relatively unknown or at least is not part of the glossary of osteopathic techniques[16]. The general body adjustment already existed in the time of Still before Littlejohn was there but without any specific application[14]. In his 1906 writing, Carl Philip McConnell, DO, described the general treatment as one consisting of passive or active movements using rotation, flexion and extension, but also including soft tissue massage or stretching along with application of heat, cold, pressure or rest, together with specific re-adjustments of body parts and removals of obstruction.[18] In 1922, Mary L. LeClere, MD, DO, partisan of the general treatment, described it as containing diagnosis, relaxation, and specific correction all in one and the same maneuvers. She believed that "as long as there are specific lesions still needing correction, there is some secondary tissue tension along the entire spine that had better be restored to normal each time. At least no one can know that there is none until he has tested for it and the act of testing for it corrects it."[19] Once again, similarities can be found here to that of the general treatment of Littlejohn and Wernham.

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McConnell might have been the first to write about a general treatment, but as Littlejohn did, he warned that it should only be used under certain conditions, i.e., (1) constitutional diseases that are to be treated symptomatically, (2) anemic cases, and (3) where the underlying disease process has still to be determined.[18, 20] Deploring the fact that there was a tendency among some osteopaths to give general treatments in every case presented, and possibly concerned that a general treatment might accentuate the ignorance of many osteopaths, he might have curbed its development in the United States. This may partially explain why the GOT approach didn't develop in America as it did in Europe, where Littlejohn's teachings spread the awareness of the GOT through John Wernham's publishing, college, clinic and initial co-founding of the Institute of Applied Technique circa 1956.[21] Mervyn Waldman, DO, a former Wernham student, rather reminds us that the term "general" never means vague or imprecise; indeed, efficient tissue and body analysis, as well as any subsequent treatment, demands accuracy and specificity of focus. However, in contrast with the "specific treatment" that relates to diagnosis and treatment of a small articular field, the "general treatment" relates to the idea that the whole body is attended to as one articular mechanism.[20]

At the present time, the Institute of Classical Osteopathy (ICO) in the UK offers its teaching in osteopathy based on the principles and techniques laid down by Dr. Littlejohn. According to the observations of Simon Fielding, a British osteopath and the first chairman of the General Osteopathic Council (GOsC), there was much more use of traditional osteopathic techniques in Europe, with some osteopaths using many of the techniques that Littlejohn taught in the 1920's. One possible reason behind this might be the fact that in England, when Littlejohn introduced osteopathy, there was resistance from the British medical establishment to license another group of clinicians as physicians, as noted by J.E. Carreiro, DO, in an interview for the "DO" journal,[12] reported that Europeans were less open to a different form of medicine. At that time, European physicians were more scientifically advanced than those in the United States. But despite their differences, DOs and British manual osteopaths share a dedication to holistic healing and whole-patient care.

The Concept Behind the General Osteopathic Treatment

As stated by J.F. Kemp, DO, Littlejohn considered that health rests on a three-pillared foundation, i.e., structure adjustment, function adjustment, and the adjustment of the organism to its environment.[22] Littlejohn defined "adjustment" as the law governing and regulating the physical conditions of the organism.[23] Adjustment may be seen as the adjustment/coordination of part to part, organ to organ, tissue to tissue, on the basis of mobility rather than anatomical position.[20] The GOT, which may include "specific adjustment'"administered along its course, is given in order to balance these 3 pillars. Adjustment of the structure, i.e., spine and limbs, is given through general and specific treatment and long lever techniques are commonly applied. Adjustment of the function consisted of working on the lungs, the digestive and assimilative organs, as well as on the eliminative organs through the ribs and the osteopathic center.[24] Adjustment of the organism to its environment is also considered on the physical, mental, emotional and spiritual planes. As Still paid more emphasis on the structure, Littlejohn insisted on the physiological aspect of the osteopathic lesion and treatment as he said: "The foundation of technique is the posture of the body and the physiology of the spine."[1] Based on this statement, Wernham developed the biomechanical component of the first pillar, i.e., adjustment of structure, that made a link between the structure and the function. He used the term "Body Adjustment" – also named Total Body Adjustment and General Osteopathic Treatment – as a "general and specific" treatment as advocated by Littlejohn – hence respecting the three-pillars foundation – that consists of a routine treatment based on the mechanics of the spine and pelvis, spinal arches, gravity lines, and osteopathic centers.[25] Wernham defined this kind of treatment or global approach as a "classical osteopathic treatment," therefore in line with the "classical osteopathic" approach to treatment from Littlejohn. In terms of treatment philosophy, classical osteopathy has to be understood as related to "integration."[1] According to Waldman, Littlejohn would have said that "the total body adjustment is an attempt to co-relate and co-ordinate the structural and functional conjoint activities of the body mechanism." [20] It has nothing to do with pushing or thrusting bones nor the rubbing or gouging of soft tissues, but to allowing change of functional activity throughout the body, as such physical treatment is expected to be converted into a significant physiological response.

Using the word "classical" to define this general osteopathic treatment may be related with osteopathy history and evolution. Indeed, J.E. Stark, DOMP (Canadian title for non-physician osteopathic practitioner), stated that traditional or classical osteopathy may refer to a period from 1910 – 1950, between the Original and the Modern period.[26] This period coincides with when Littlejohn taught at the BSO in London and Wernham was one of its students. I.M. Korr, DO, PhD, might have also well resumed this global approach to treatment while addressing the British osteopathic community in 1996 at the Commonwealth Institute in London, UK:

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> *I remind you further of another principle. You do not treat symptoms, you do not treat pain, you do not treat diseases, you do not treat parts of the body, you do not treat the musculoskeletal system; you treat persons, you treat human beings. It is they who get well or not depending on the competence of their built-in health care system. I would like to hear you saying this more and more, that you are treating more than a musculoskeletal system.*[27]

The overriding principle of classical osteopathy is therefore not bony adjustment, but body adjustment. According to Wernham, the science and system of therapeutics we call osteopathy constitutes the application of physical treatment for conversion into physiological processes within the body. This, in essence, is the basis behind the body adjustment treatment.[28]

The Fundamentals and Principles of the General Osteopathic Treatment

Based on Littlejohn's teachings, John Wernham developed the GOT.[29] This osteopathic treatment encompasses a series of gentle passive rhythmic long lever based appendicular, pelvic, and spinal mobilization procedures defined by three basic principles: routine, rotation, and rhythm. The routine is to make sure that the physician or osteopathic manipulative practitioner covers all the body parts in the patient's examination in search of somatic dysfunction. The routine is generally done on the right and left of the patient in a supine and in a prone position (Figure 1). Rotation is used with a long lever on all body parts. It is important to note that the rotation originates from the physician's body toward the patient. This could be considered as a form of passive mobilization of each articulation.

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Figure 1. *The General Osteopathic Treatment sequences. Adapted from J. Wernham and M. Waldman with permission from the ICO.*[31,32]

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When rotation is not possible on a given articulation, the technique is used on the permitted range of motion of the articulation. The rhythm imposed by the physician to the patient has two orientations: stimulation (fast rhythm) or inhibition (slow rhythm).[30] A mixture of rhythm can be used depending on the therapeutic goal.

The goals of the GOT are mainly to identify potential somatic dysfunctions, to gain range of motion (direct technique), and to soften the tissues. Indeed, repetitive passive movements are known to improve range of motion and to promote motor function in patients by modulation corticospinal processes.[33] Moreover, passive rhythmic mobilization procedures possibly stimulate the intrafascial mechanoreceptors of tissues involved leading to altered proprioceptive input to the central nervous system and therefore tonus regulation of motor units associated with these tissues.[34] An impact on heart rate variability (HRV) and the sympathovagal balance could possibly also be induced by the GOT, as standard OMT like balanced ligamentous and membranous techniques have been shown to influence HRV and the autonomic nervous system activity, increasing parasympathetic activity.[35]

Generally, a full GOT routine may last for 20 minutes, but may be a lot quicker if it is done on a specific body part. What is interesting about the GOT is that the technique, when used on a specific body part, serves as an assessment, a treatment, and a re-assessment. The GOT can easily be combined with other specific types of OMT. For example, it can be used in the preparation of a HVLA thrust or as an integration after a muscle energy correction. As with other osteopathic techniques, GOT follows the TART principles and can be easily applied to treat or assess the patient's somatic dysfunction. John Wernham gave such a definition of the body adjustment:

> *The technique employs the long lever and deals with all tissues conjointly with only special emphasis where it is necessary. The method is deliberately a routine in order to ensure that nothing is missed in diagnosis and, further, to establish the lost rhythm so often lacking in the patient. The limb leverage is powerful and brings into play every muscular insertion into the spine and into the pelvis, yet the effect is gentle, smooth and relaxing. The objective is the restoration of the internal environment and thus provides those conditions essential for the recovery of the lesion state. Without such preparation, the positive effect of spinal correction might be limited and short-lived. Indeed, in many cases the general body adjustment could be enough for nature to make the recovery.*[36]

Readers who are interested in the depth of the biomechanics and philosophy of Littlejohn and in the principles and practice of the general treatment are oriented in the reading of some literature produced by John Wernham[25, 37] and Mervyn Waldman.[8] Littlejohn also considers the alignment of the spine as the basis of treatment.[30,38] Wernham applied Littlejohn's philosophy of the alignment of the spine as the basis of the GOT to the adjustment of the different parts of the body in relation to the postural elements of the body as a whole. [39] "To bring it all in" was Wernham's common phrase to stress the fundamental therapeutic principle that can be applied to the natural, inherent interrelationships of the body. He said, "Osteopathy is not manipulation. The osteopathic Lesion is physiological and not anatomical. The key to this is found in adjustment, not correction. This is impossible in the living body."[40] This illustrates well the notion of adjustment as defined by Littlejohn and further explained by Wernham in the concept of "Body Adjustment" or the GOT. At last, C. Campbell, DO, summarized the body adjustment, as Wernham insisted to call it:

> *...as a precise approach to the body architecture and physiology. Each movement in it has a precise aim not only for the individual part that is being approached, but also in relation to how that part relates to every other part within the body. This includes not only the architectural structure but also the nervous system both cerebral spinal, sympathetic and the arterial ,venous and lymphatic systems, amongst others.*[41]

The GOT and routine employs the oscillatory technique, which parallels that of the facilitated oscillatory release (FOR) technique inspired by Littlejohn and developed by Zachary Comeaux, DO.[42,43] Both techniques use oscillatory motion, are used as assessment/treatment, and are meant to treat somatic dysfunction. The main difference is that FOR is a wave technique, derived from Dr Fulford's vibrations, used to normalize muscle tone and articular balance, and requires fine palpation (as in cranial therapy).[44] The GOT deals with all tissues conjointly, with only special emphasis where it is necessary. Again, the GOT may be a good adjunct to FOR and vice-versa.

The GOTs scientific background

Early osteopathic physicians used articulatory and non-articulatory procedures as part of commonly accepted practice, including the use of the general osteopathic treatment. Despite more than a century of osteopathic practice, there is little scientific evidence to support the use or not of the GOT for any medical condition or the treatment of somatic dysfunction as it is the case of many of Still's techniques or other OMT. Indeed, available literature about the use of the GOT in the treatment of several conditions mainly resides in lectures, academic textbooks and collected papers[20]. Although interest in

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evidence-based effects of the GOT does exist, to our knowledge, only few studies were conducted. Indeed, recent trials studied the effectiveness of the GOT, as the main osteopathic procedure, or along with other OMT. For instance, Albers *et* al. found that the GOT was as beneficial as other osteopathic intervention (OI), e.g., high velocity thrust, muscle energy techniques, myofascial release, balanced ligamentous tension, and visceral/cranial techniques, addressing the somatic dysfunction, in the treatment of fibromyalgia. Indeed, in this randomized study (n=50), they found a significant change in the average pain intensity score, measured by a visual analogue scale (VAS) between the OI group and the control group (VAS: 2.9, 95% confidence interval (CI) = 1.12-4.52), and between the GOT group and the control group (VAS: 2.4, 95% CI = 0.65-4.11).[45] A previous randomized study with control group (n=34) showed that osteopathic intervention using the articular and soft tissue mobilizations included in the GOT was effective, in the short term, on anxiety and global body perception in asymptomatic female students, (F=37.41, P<0.0001 and F= 33.66, P < 0.0001 respectively) and a significant group by intervention interaction (F=6.23,P=0.018 and F=6.34, P=0.017 respectively).[46] Moreover, another recent open, uncontrolled study (n=113) showed that GOT was associated with postural changes, e.g., reduced sagittal imbalance and apical deviation and increased lordotic apex position, either in symptom free volunteers or patients with mild idiopathic back pain. Indeed, sagittal imbalance significantly decreased from mean 3.13⁰ (SD: 2.67⁰) before GOT to 2.83⁰ (SD: 2.64⁰) after GOT (two-sided t-test, p=0.034), apical deviation decreased from 5.21 mm (SD: 3.09 mm) to 4.80 mm (SD: 2.64 mm) (one-sided t-test, p= 0.047), and lordotic apex position increased from mean 37.50⁰ (SD: 40.63⁰) to 43.81⁰ (SD: 40.47⁰) (one-sided t-test, p=0.028).[47] In a single-case research, Pellerin *et* al, studied the consequences of three consecutive osteopathic manipulative sessions, based on partial GOT technique, on postural control and low back pain level. They concluded that OMT can improve body balance (TAUnovlap = - 100% and p < 0.01).[48] Furthermore, several researches conducted in Russia reported encouraging significant results assessing the effects of the GOT on neurotic states in women, on asthmatic children and on patients suffering from chronic tension-type headaches.[49-51] Whether these studies showed some statistically significant effects of the GOT on subjective and objective outcomes, some controversial results were also reported for objective outcomes as reported by A. Polet and her team. Precisely, in this open, uncontrolled study (n=26), they failed to demonstrate the influence of the GOT on the lumbar rigidity coefficient (p>0.10).[52]

Taking into account the poor homogeneity of these studies, i.e., randomized vs non-randomized, open-label and un-controlled, subjective outcome mainly assessed vs objective one, questionable methodology and power, it is difficult to draw reasonable conclusions about the real physiological effects of the GOT, as used only or in part of the osteopathic treatment. However, old classical literature describing the beneficial effects of classical OMT procedures, e.g., splenic pump, pancreatic stimulatory and inhibitory techniques, that are commonly used by classical osteopaths along with the GOT, showed the effects of osteopathic manipulative treatment in diabetes mellitus, and stimulating immunity.[9] Research conducted during the classic era of osteopathy in the United States provided already useful data or at least a foundation for generating hypotheses about the potential mechanisms of action of OMT despite the lack of evidence-based medicine tools that are accessible today. To our knowledge, no adverse effect or risk has been reported with the use of GOT and beside the recognized contra-indications of treating somatic dysfunction,[53] there are no scientifically published contraindications for the use of the GOT.

Conclusion

The GOT is an OMT that was taught from oral tradition. There are few scientific papers on the GOT. The approach is commonly used and taught in osteopathic schools abroad since the philosophy and principles of the general treatment was introduced at the BSO by J.M. Littlejohn and spread by John Wernham and its fellow contemporary companions who studied osteopathy at that time at the BSO. The general body adjustment may have existed in the time of A.T. Still but without any specific application.

The GOT is a passive mobilization method using rhythm, rotation, and long-lever techniques. Its use in an assessment and diagnosis routine may help the physician to identify and adjust somatic dysfunction. It can also be used in treatment as an adjunct to other specific OMT. The objective is the restoration of the internal environment and to provide conditions essential for the recovery of the lesion state.

Osteopathic physicians specialized in OMT use a broad range of techniques, including articulatory techniques, and GOT may be added in their clinical toolbox. It is important for osteopaths in the USA to keep their reputation as leader in OMT abroad by conducting well controlled trials.[54, 55] There is an identified need for further studies in order to treat somatic dysfunctions or other medical conditions, as earlier research has already shown a link between somatic dysfunction and medical disorder.[56] With a view to this, the GOT could eventually be considered as a recognized OMT by the ECOP. Especially when more structured and powerful studies are designed to evaluate this novel and general osteopathic approach to treatment.

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Indeed, the literature suffers from several shortcomings on this topic, for this reason we strongly suggest further research.

"Osteopathy is an absolute science, but the art needs a new introduction." – Charles S. Green, DO

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