

Methodological approaches to objectification of somatic dysfunctions in osteopathy

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SUMMARY

Osteopathy is a holistic manual medical system for the prevention, diagnosis, treatment and rehabilitation of the consequences of somatic dysfunctions, entailing health disorders, aimed at restoring the body's natural abilities for self-correction. A specific object of osteopathic influence is somatic dysfunction - a reversible dysfunction, manifested by biomechanical, hydrodynamic (rhythmogenic) and neurodynamic components. Somatic dysfunctions in the body can manifest themselves at the global, regional or local levels.

Conclusions. Osteopathy as a manual holistic system of influence on the whole organism has a specific object of influence - somatic dysfunction, which makes it possible to consider it an independent modern medical specialty. The classification and standardized registration of diabetes expands the clinical possibilities of osteopathy, makes it possible to study the prevalence of diabetes and, based on the principles of evidence-based medicine, prove the clinical efficacy of osteopathy in various pathological conditions of the body.

Key words: osteopathy, definition of osteopathy, somatic dysfunction, classification of somatic dysfunctions, osteopathic conclusion.

RESUME

Osteopathy is a holistic manual medical system used for prevention, diagnostic, treatment and rehabilitation of the somatic dysfunctions which cause health disorder by reinstatement of human body natural power. The specific osteopathic object of influence is a somatic dysfunction which is a functional disorder that includes biomechanical, hydrodynamical (rhythmogenic) and neuro-dynamical components. Somatic dysfunction could reveal in global, regional and local levels.

Keywords: osteopathy, osteopathy definition, somatic dysfunction, classification of somatic dysfunctions, osteopathic assessment.

Osteopathy is one of the medical directions, which are based on the use of manipulative techniques. All osteopaths are well aware of the postulates of E.T. Still: the human body is a dynamic functional unity; the body has self-regulating mechanisms capable of self-correction; structure and function are interrelated at all levels [12].

In Russia, the history of osteopathy began in the late 90s of the last century, and its intensive development was accompanied by the accumulation of empirical and scientific data that testified to the clinical effectiveness and explained the anatomical and physiological essence of changes in the human body under the influence of an osteopath [2, 4, 9].

The lack of formalization of the requirements for the actions of an osteopath, which is customary for allopathic medicine, the lack of a clear conceptual and terminological apparatus and certain standards of activity, gave rise to a number of problems accompanying the introduction of osteopathy into the health care system, the most significant of which, in our opinion, are:

1) the difficulty of communication between the osteopaths themselves and the difficulty of objectification the results of diagnostics and correction of changes in health in the human body;

2) the emergence of various "near-osteopathic" directions, using similar terminology, but not having a clear methodological understanding and, as a result, being "pseudoscientific", not guaranteeing the achievement of the desired result, distracting patients and sometimes being dangerous for them;

3) difficulty in perceiving the essence of osteopathic influence by doctors - specialists, their distrust of the results obtained by osteopathic doctors.

The establishment of osteopathy as a medical specialty in Russia required a clear formulation of the concept and methodology of osteopathy, the identification of a specific object of research and treatment, and the development of a conceptual and terminological apparatus.

This article is the result of a long understanding of the essence of professional activity in the field of osteopathy and numerous discussions with colleagues and doctors of other specialties, the evidence of positions is confirmed by the data of many clinical and fundamental studies.

The existing numerous definitions of osteopathy do not always reveal its essence. We have formulated a modern definition of osteopathy, which, in our opinion, reflects the philosophical and methodological aspects of this specialty.

Osteopathy is a holistic manual medical system for the prevention, diagnosis, treatment and rehabilitation of the consequences of somatic dysfunctions, entailing health disorders, aimed at restoring the body's natural abilities for self-correction.

The difference between osteopathy and other methods of manual treatment is an integrated approach to the body as a whole, diagnosis and treatment of the patient, and not an isolated disease, the search for the cause of the disease and its elimination, and not the fight against symptoms [8]. The osteopath always intends to heal the patient's body in the way that this particular patient requires. According to one of the WHO definitions, a disease is a life disturbed in its course by damage to the structure and function of the body under the influence of external and internal factors during the mobilization of its compensatory-adaptive mechanisms. It can be argued that any disease has both functional and structural components. The functional component is due to a disorder of the organ's function without disturbing its structure. The structural component, on the contrary, is associated with a violation of the structure of the organ on the tissue, cellular and subcellular levels, at the level of the structure of the intercellular substance. One of the postulates of osteopathy reads: "... function and structure are interdependent" [12]. There is no function without a structure, in turn, violations of the function lead to a change in the structure. The fact that in a number of cases structural changes cannot be identified,

only testifies to the insufficient resolution of the applied research methods. With the development of medical science and technology, such opportunities expand and confirm the stated provisions [1].

A very important question is whether the changes in structure and function that have occurred are reversible or not. It depends on which tissue the changes have taken place, and under what conditions. There are tissues whose cells can divide - epithelial and connective. Nerve and muscle cells (striated muscle fibers and cardiomyocytes) cannot divide, but nerve cells can repair processes and form new synapses, and muscle cells can undergo hypertrophy. With extensive damage, that is, when various tissues in the organ are affected, a connective tissue scar is formed, and such a change in structure is irreversible. If only the epithelium or only the connective tissue structure is damaged, then they can completely restore not only their functions, but also the structure [13].

The osteopath addresses the functional component of the disease. Depending on the ratio of reversible and irreversible disorders, both the indications and the effectiveness of osteopathic treatment will change [3].

A specific object of osteopathic influence is somatic dysfunction, which has found its place in the International classification of diseases, injuries and conditions affecting health of the 10th revision (M-99.0) [15]. In Class XIII "Diseases of the musculoskeletal system and connective tissue", the heading M-99 - "Biomechanical disorders not classified elsewhere" is highlighted, including:

- 99.0 - Segmental or somatic dysfunction;
- 99.00 - Biomechanical dysfunction - neck area;
- 99.01 - Somatic dysfunction - head area;
- 99.02 - Somatic dysfunction - chest area;
- 99.03 - Somatic dysfunction - lumbar region;
- 99.04 - Somatic dysfunction - sacrum area;
- 99.05 - Somatic dysfunction - pelvic area;
- 99.06 - Somatic dysfunction - lower limb;
- 99.07 - Somatic dysfunction - upper limb;
- 99.08 - Somatic dysfunction - chest;
- 99.09 - Somatic dysfunction - abdominal area and others;
- 99.8 - Other biomechanical disorders;
- 99.9 - Unspecified biomechanical disorders.

We have proposed a classification of somatic dysfunctions, taking into account the level, mechanism of formation and localization of the disorder (Fig. 1) [10].

The American Osteopathic Association defines somatic dysfunction as impaired or altered function of interrelated components of the body's somatic system: skeletal, articular, myofascial structures and associated vascular, lymphatic and neural elements.

The Russian Osteopathic Association (ROSA) gives a slightly different definition [11]: somatic dysfunction (SD) is a reversible (functional) dysfunction of interrelated components of connective tissue structures and other organs, manifested by biomechanical, hydrodynamic (rhythmogenic) and neurodynamic components:

- the biomechanical component of diabetes is a violation of mobility, compliance and tissue balance [7];
- the hydrodynamic (rhythmogenic) component of DM is a violation of production

and transmission of endogenous rhythms [2];

- the neurodynamic component of diabetes is a violation of nervous regulation [14].



Rice. 1. Classification of somatic dysfunctions.

In our opinion, such a definition of diabetes makes it possible to look at and evaluate diabetes much more broadly, highlight the value of the global and regional contribution, add new tests to osteopathy, for example, assessing global hydrodynamic activity (for thoracic and cardiac rhythmic impulses), and many others.

From our point of view, it is important that as a result of impaired adaptation (with maladjustment) in the body, diabetes can cause clinical manifestations that may not coincide with it in localization. Diabetes mellitus can be detected in patients, both in the presence and in the absence of obvious signs of the disease.

Diabetes mellitus in the body can manifest itself at the global, regional or local levels. Thus, the patient's condition can be described (characterized) at these three levels from the side of biomechanical, hydrodynamic (rhythmogenic) and neurodynamic disorders [11]. In order to assess the severity of violations at any of the levels, it is proposed to introduce symbols by points:

No sign				
Mild severity of the violation			One point	(+)
Moderate	degree	severity	Two points	(++)
Significant	degree	severity	Three points	(+++)
violations				
violations				

Although, to a certain extent, such accounting is conditional, with the appropriate experience it gives a fairly objective quantitative assessment of the existing violations.

Global level of manifestation of diabetes (level of the organism as a whole)

Global biomechanical disorder (HDN) is a functional disorder of the qualitative characteristics of tissue, which affects several regions of the body (polyregionality), consists in a significant decrease in the elasticity and mobility of tissue in one of the planes of space and is not associated with pain.

Global hydrodynamic (rhythmogenic) disorder (GRN) is a disorder in the production of endogenous rhythms. The most significant endogenous rhythms in osteopathy are: cranial, respiratory and cardiac rhythmic impulses [5, 6, 16]. They are evaluated according to the following parameters: frequency, strength and amplitude.

Global neurodynamic disorder (GND) is a violation of the nervous regulation of the body, manifested by psychoviscerosomatic and / or postural disorders.

Psychoviscerosomatic disorder characterized by secondary polyregional limitations of tissue mobility, which are anamnesticly associated with the psychoemotional component.

Postural disorder is characterized by a change in the position of the body in space and is associated with a violation of the processes of proprioception.

Regional level of manifestation of diabetes (level of one of the regions of the body)

Regional biomechanical disorder (RBI) is a change in elasticity, position, mobility, compliance and balance of tissues, which is detected in one of the regions of the body. Region (R) is a part of the body isolated during an osteopathic examination, including organs and tissues united by anatomical relationships. Osteopaths conditionally distinguish the following regions (Fig. 2). The cervical, thoracic, lumbar and pelvic regions have visceral and somatic components.

Regional rhythmogenic disorder (RRH). At the regional level, a separate rhythmogenic component can be omitted, since it is associated to one degree or another with a certain regional rigidity, which means that it is already assessed in the section of regional biomechanical disorders.

Regional neurodynamic disorder (RND) is a functional disorder that occurs at the level of several segments of the spinal cord and is associated with irritation of one of the elements of the neural chain between the visceral and somatic components [14]. Regional neural disorder can manifest itself as viscerovisceral (VS), viscerovisceral, somatosomatic and somatovisceral (SV) dysfunctions (Fig. 3).

	Viszer.	Somatic.
R. head		1, 2, 3
R. neck	1, 2, 3	1, 2, 3
R. chest	1, 2, 3	1, 2, 3
R. lumbar	1, 2, 3	1, 2, 3
R. pelvic	1, 2, 3	1, 2, 3
R. in. limbs		1, 2, 3
R. n. limbs		1, 2, 3
R. TMO		1, 2, 3

Rice. 2. Regions for assessing regional biomechanical disturbance.

	Cranium	
C1-C3	BC 1, 2, 3	CB 1, 2, 3
C4-C6	BC 1, 2, 3	CB 1, 2, 3
C7-Th2	BC 1, 2, 3	CB 1, 2, 3
Th3-Th5	BC 1, 2, 3	CB 1, 2, 3
Th6-Th9	BC 1, 2, 3	CB 1, 2, 3
Th10- L1	BC 1, 2, 3	CB 1, 2, 3
L2-L5	BC 1, 2, 3	CB 1, 2, 3
S	BC 1, 2, 3	CB 1, 2, 3

Rice. 3. Regions for assessing regional neurodynamic impairment.

Local level

At the local level, individual SDs of a particular organ are determined. In this case, diabetes at this level can be defined as acute or chronic (Table 1).

Table 1

Characteristics of the manifestations of the components of local somatic dysfunctions

Component / dysfunction	Acute SD	Chronic diabetes
Biomechanical	good displacement	limited displacement
Rhythmogenic	swelling, fever	fibrosis
Neurodynamic	sharp pain	soreness of varying degrees severity

Based on the use of our approach, the osteopathic conclusion can be quite accurately formulated (Fig. 4).

The use of a standard form of conclusion allows one to subsequently understand the logic of an osteopathic physician and assess the correctness of the methods for correcting diabetes mellitus chosen by him.

The proposed method for systematizing diabetes can serve as the basis for conducting international multicenter scientific research and accumulating data on the prevalence and severity of diabetes in different populations and in various pathological conditions, which will expand the possibilities of osteopathy and substantiate its clinical efficacy.

Global	GBN 1, 2, 3	ГPH Tap. RI 1, 2, 3 Serd. RI 1, 2, 3 Torak. RI 1, 2, 3	GNN Posture. 1,2,3 Ps-visc.-Catfish. 1, 2, 3
Regional	RBN B C R. head 1, 2, 3 R. neck 1, 2, 3 1, 2, 3 R. chest 1, 2, 3 1, 2, 3 R. lumbar 1, 2, 3 1, 2, 3 R. pelvic 1, 2, 3 1, 2, 3 R. in. horse-th 1, 2, 3 R. n. end 1, 2, 3 R. TMO 1, 2, 3		RNN Cranium C1-C3 BC 1, 2, 3 CB 1, 2, 3 C4- C6 BC 1, 2, 3 CB 1, 2, 3 C7-Th2 BC 1, 2, 3 CB 1, 2, 3 Th3- Th5BC 1, 2, 3 CB 1, 2, 3 Th6- Th9BC 1, 2, 3 CB 1, 2, 3 Th10- L1BC 1, 2, 3 CB 1, 2, 3 L2-L5BC 1, 2, 3 CB 1, 2, 3 S BC 1, 2, 3 CB 1, 2, 3
Local	Dominant somatic dysfunction:		

Rice. 4. Standard form of osteopathic report

conclusions

Osteopathy, as a manual holistic system of influence on the whole organism, has a specific object of influence - somatic dysfunction, which makes it possible to consider it an independent modern medical specialty. The classification and standardized registration of diabetes expands the clinical possibilities of osteopathy, makes it possible to study the prevalence of diabetes and, based on the principles of evidence-based medicine, prove the clinical efficacy of osteopathy in various pathological conditions of the body.

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