The use of manual therapy and natural physical factors of the resort of Sochi in treatment vestibulocochlear disorders in patients with cervical myofascial pain syndrome

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Manual therapy and natural resort physical factors of Sochi recreation region in complex treatment vestbulocochlear disfunction of cervical myofascial pain syndrome patients

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SUMMARY

The work shows that manual therapy leads to the cure of only 27.4% of patients with vestibulocochlear disorders in cervical myofascial pain syndrome. The therapeutic effect can be potentiated using the author's scheme of prescribing balneo-, thalassotherapy and dosed marine procedures. This leads to an intensification of vertebrobasilar blood circulation by 34.7% and a complete regression of the manifestations of the disease in 46.3% of the observed patients. The number of relapses during a three-year follow-up is reduced by 19.1%.

Key words: myofascial pain syndrome, manual therapy, vestibulocochleardisorders, balneotherapy, thalassotherapy.

RESUME

In article it is shown that manual therapy was effective only for 27.4% patients with vestibulocochlear disfunction of cervical myofascial pain syndrome. It is possible to increase therapeutic effects of manual therapy by the author's scheme of appointment of balneo-, thalassotherapy and the dosed sea procedures. The scheme make an intensification on 34.7% vertebro-bazilaris blood circulations and to absence of all symptoms of disease at 46.3% of observable patients. The quantity of relapses at three-year supervision decreases on 19.1%.

Keywords: myofascial pain syndrome, manual therapy, vestibulocochlear disfunction, balneotherapy, thalassotherapy.

INTRODUCTION

Myofascial pain syndrome (MFPS) of various localization is one of the urgent problems of modern medicine [1–5]. Severe forms of cervical MFBS are accompanied by vestibulocochlear disorders (VCI) and autonomic disorders, different in severity and quite difficult to treat [2, 5, 6]. Regardless of the etiology and localization, the lesions of VKN are characterized by impaired auditory and vestibular functions in various sequences and degrees of severity. The main symptoms - noise, ringing, a feeling of congestion and pulsation in the ears on one or both sides, imbalance, rapid motion sickness in transport - are accompanied by pronounced vegetative manifestations - nausea, vomiting, changes in the rhythm of respiration, pulse, fluctuations in blood pressure, increased sweating, blanching or redness of the face, neck [1, 2, 4, 5, 6, 7].

However, in the literature available to us, we did not find sources devoted to the combination of manual therapy methods using natural therapeutic factors in the treatment of VCI with MFBS. Solving this problem became the goal of this study.

METHODS

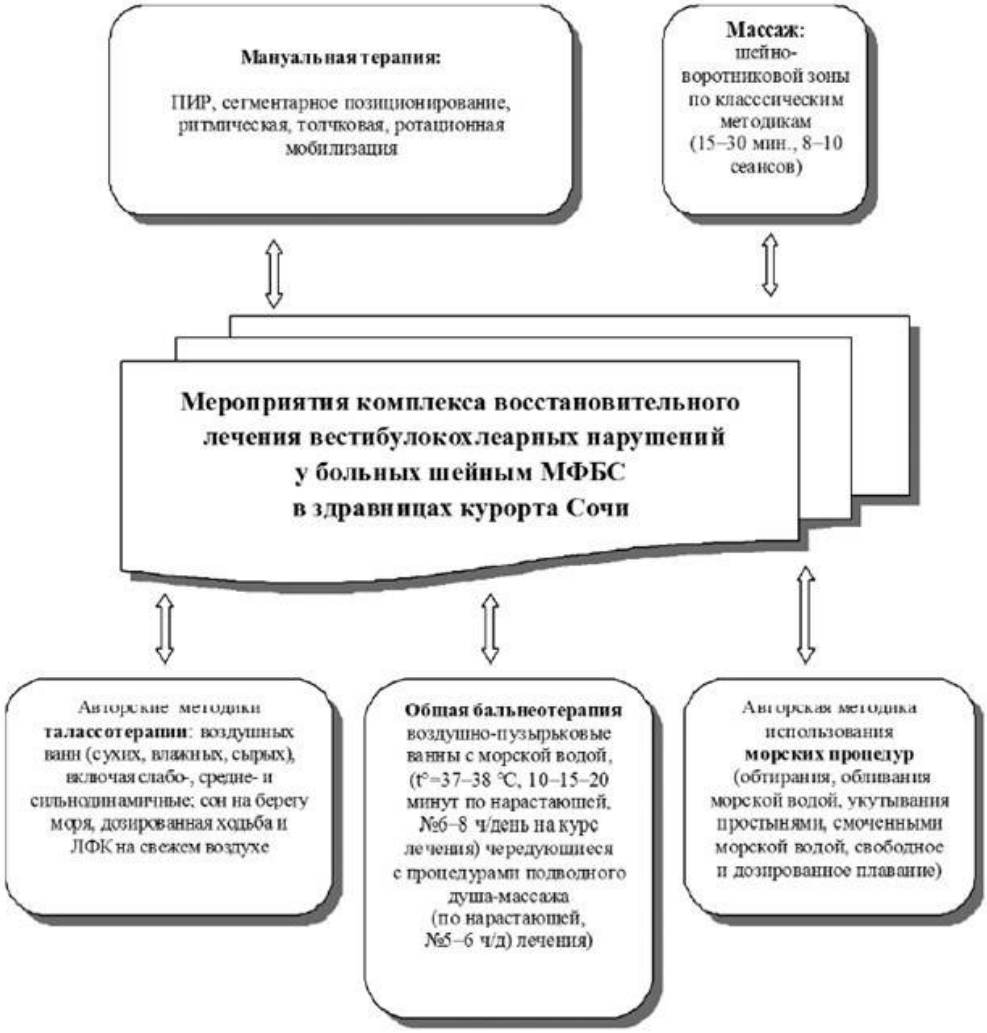
The studied contingent of patients with HCI (441 people - 252 women and 189 men aged 20–65 years) who underwent outpatient and sanatorium treatment at the Research Institute of Neuro-orthopedics and Rehabilitation Medicine and the Tikhy Don sanatorium in the period from 2006 to 2012. , was divided into two equivalent clinical groups - control (279 people) and main (162 people). The duration of the manifestations of MFBS up to 5 years was noted in 64.3%, from 5 to 10 years - in 18.4%, and over 10 years - in 17.3% of the surveyed. The duration of the appearance of VKN was from 7 days to 12 months.

At the preliminary stage, patients with endocrine, organic and hereditary diseases were excluded from the study. The connection with degenerative-dystrophic changes in the cervical spine was established on the basis of instrumental and anamnestic examination.

The examination was carried out by methods of vertebral neurology and manual therapy [1, 2, 3, 4, 9]. Painful myofascial seals were detected by the method of kinesthetic palpation [2, 6]. The triggering phenomenon of the detected myofascial trigger points (MPTP) was diagnosed in the presence of reflected spontaneous or evoked pain, the appearance of a local convulsive response during transverse palpation of the trigger point [2, 6]. Otoneurological examination included complex audiometry - acumetry, tuning fork tests, threshold tonal audiometry with suprathreshold tests, Weber's tonal experience, intelligibility of the speech test, noise measurement; vestibulometry, rheoencephalography (REG) and, if necessary, electroencephalography.

REG and EEG were performed on hardware and software complexes of the companies Valenta (Taganrog) and Neurosoft (Ivanovo).

The rehabilitation treatment scheme (Scheme 1) included manual therapy and massage (control and main groups), as well as dosed sea bathing procedures, thalasso and balneotherapy procedures (main group). The massage was carried out according to classical methods in the neck and collar area (6-8 procedures). Manual therapy (MT) of cervical MFBS included post-isometric relaxation using respiratory and oculomotor synkinesias [2], segmental positioning methods [10], as well as rhythmic, jerking, positional mobilization and / or mobilization by rotation in the patient's supine position [2, 4, 9] and were performed every other day, 3-5 sessions per course.



Scheme 1. The author's complex of therapeutic and prophylactic measures in patients vestibulocochlear disorders in the health resorts of the resort of Sochi.

According to the degree of cooling effect and therapeutic effect, marine procedures were classified depending on the temperature into:

- warm (water temperature - 25 degrees Celsius and above);
- moderately warm (water temperature 20-24 degrees Celsius);
- cool (water temperature - 18-19 degrees Celsius);
- cold (water temperature - 16-17 degrees Celsius).

Marine procedures for patients with cervical MFBS with psychoemotional and autonomic disorders were prescribed in the following forms:

- rubdown with sea water;
- wet wrapping in climate chambers with sheets soaked in heated sea water;
- dipping into the sea;
- sea bathing on natural medicinal beaches (in the warm season) or in the open pool with heated sea water (in winter).

Sea bathing was carried out in the first 1–4 days according to the mode of weak exposure, warm (2–5 minutes), on the following days, according to the mode of moderately intense exposure (warm - 15–20 minutes; moderately warm - 5–15 minutes, cool - 1 -3 minutes). The author's methods of dosed thalassotherapy were used: warm bathing in regimen I for 5–12 minutes; for mode II 12–25 min .; for mode III - 15–40 minutes; moderately warm according to mode I - 1–4 minutes; for mode II - 3–10 minutes; for mode III - 5–20 minutes; cool mode I - 1-3 minutes; for mode II - 2–5 minutes; for III mode - 4–10 min.

In our study, we used thalassotherapy in the form of individual re

presses of being in the fresh air, sleeping on the seashore in a climatic chamber, dosed walking without high physical exertion, therapeutic exercises in the open air (according to a gentle training mode of exposure). In the complex of restorative procedures for the studied contingent of patients, air baths were subdivided:

- depending on the values of the effective equivalent temperature (EET) for warm (EET above 23-C), indifferent (EET 21-22-C), cool (EET 17-20-C), moderately cold (EET 15-16-C);

- by aerodynamic effect on aerostatic (at calm), weakly dynamic (at wind speeds up to 1 m / s), average dynamic (at a wind speed of 1–4 m / s), highly dynamic (at a wind speed of more than 4 m / s);
- according to hygrometric conditions for dry (at relative humidity less than 55%), moderately dry (at a relative humidity of 56–70%), moist (at a relative humidity of 71–85%) and damp (at a relative humidity of more than 85%). The duration of the air baths was regulated in accordance with the classical systematization of medical prescriptions for aerotherapeutic procedures for various modes of exposure [12].

Statistical processing of the results was carried out according to standard generally accepted methods.

RESULTS AND ITS DISCUSSION

As a result of the study, it was found that the leading clinical symptoms in the observed patients were (Table 1) noise or ringing in the ears (in 98.4% of patients), unilateral or bilateral hearing loss (in 68.3%), crania and cervicalgia (in 61.9%), depressive-asthenic syndrome (in 42.6%), sleep disturbance (in 24.0%), cervical dizziness (in 56.9%) with instability and swaying when walking and, especially, during the transition from a prone position to an upright position and vice versa. These symptoms were aggravated with the need to maintain balance, hold a posture, active movements, especially turns, in the cervical spine. The patients were characterized by increased meteosensitivity (in 55.7% of cases). The deterioration of the state due to stressful situations was accompanied by an increase in pain when moving in the cervical spine, an increase in the feeling of heaviness in the back of the head.

It was established by manual testing that m. rectus capitis major, m. rectus capitis inferior in the suboccipital space and the posterior arch of the atlas (in 77.6% of cases), m. trapezius (in 70.1%), m. obliquus capitis superior and m. sternocleidomastoideus in the area of attachment to the mastoid process (in 49.6%), active MPTPs in these muscles were found in 17.2–23.5% of cases. The inferior oblique, medial pterygoid, lateral pterygoid muscles, the nuchal ligament, and the posterior arch of the atlas were also frequent sites of MPTP localization.

As a result of the treatment, it was found that the maximum effectiveness of the therapy was observed in patients with cervical MFBS with hearing impairment in sound-transmitting and mixed types (both the control and the main groups). Thus, a decrease in ringing and tinnitus was observed in 82.7% of patients in the main and in 46.8% of the control groups of observations (Klein's audiometric test), and complete disappearance was observed in 46.38% and 27.6%, respectively (Table 1). 1). The most effective treatment results were in patients with mixed hearing loss with signs of intra-labyrinth disturbance of sound conduction and indicators of the bone-air interval of 12–20 dB. The patients showed a decrease in craniacervicalgia, normalization of clinical manifestations of VCI, and these changes were more significant in patients of the main observation group (Table 1). It should be noted,

Table 1

The prevalence of symptoms of vestibulocochlear disorders in patients with cervical MFBS and their correction during treatment in the control and main observation groups

Клинические проявления кохлео-вестибуляных нарушений	Распространенность симптомов в % к общему количеству больных в группе		
	до лечения n = 441	после лечения	
		контрольная группа n=279	основная группа n=162
Шум, звон в ушах одно- или двустороннний	98,4 (434)	72,4 (202)	53,7 (87)
Снижение слуха, заложенность, ощущение пульсации в ушах	68,3 (301)	49,5 (138)	35,8 (58)
Краниацервикалгия	61,9 (273)	15,4 (43)	6,8 (11)
Несистемное головокружение	56,9 (251)	24,7 (69)	12,4 (20)
Нарушение сна	24,0 (106)	16,5 (46)	10,5 (17)
Депрессивно-астенический синдром	42,6 (188)	29,4 (82)	26,5 (43)
Метеозависимость	55,7 (246)	39,4 (110)	22,2 (36)
Гипертония	30,8 (136)	20,1 (56)	14,2 (23)
Гипотония	12,0 (53)	7,5 (21)	6,2 (10)

Примечание. В скобках указано абсолютное количество больных.

Considering the importance of the vascular component in the mechanisms of HCI development, it was of interest to study the parameters of cerebral hemodynamics and their changes during treatment in the studied patient population. The results of the study of regional hemodynamics are presented in table. 2. Commenting on the data presented in it, it should be emphasized that as a result of the therapy, there was an increase in the linear velocity of blood flow through the vertebral arteries, an improvement in venous outflow parameters and a decrease in the coefficient of asymmetry of blood flow both in USDG and in REG, which was most pronounced in patients of the main group. The use of thalasso, balneotherapy and marine procedures in the complex treatment of the studied group of patients showed its more pronounced clinical efficacy, and one of the mechanisms of its implementation, in accordance with the data in Table. 2, is the normalization of the parameters of cerebral hemodynamics. It should be noted that the improvement of the auditory function came later and was less pronounced, the compensation of vestibular disorders came faster. An important factor in recovery was a decrease in the number of active and latent MPTP and muscle tension in the sites of specific localization of trigger points (trapezius, sternocleidomastoid, inferior oblique, medial pterygoid, lateral pterygoid muscles, ligamentum nuchae, posterior atlas arch).

table 2

Average parameters of regional hemodynamics in ultrasound doppler (USDG) and rheoencephalography (REG) in patients with vestibulocochlear disorders before and after rehabilitation treatment

	УЗДГ			РЭГ			
	ЛСК (см/с) %	ВО (%)	КА (%)		В/А (%)	ВО (%)	КА (%)
До лечения	21,6 ± 2,03 100%	+59,6	31,9	ФМ	112,4	38,7	38,8
				ОМ	115,8	36,8	40,4
Контрольная группа	25,6 ± 2,52* +18,5%	+27,6	25,4	ФМ	106,5	24,3	25,6
				ОМ	107,3	22,9	24,3
Основная группа	29,1 ± 2,85* +34,7%	+22,3	20,6	ФМ	103,2	12,4	20,4
				ОМ	104,3	10,6	22,4

Note: 1. * - the results are reliable (p <0.05) compared to those before treatment; 2. In the numerator, the average linear blood flow velocity (LBF) in absolute numbers, in the denominator - its increase in percentage.

Abbreviations: VO - venous outflow, CA-asymmetry coefficient, V / A - venous-arterial blood flow ratio, OM and FM - occipito-mastoidal and frontal-mastoidal REG derivations.

In the follow-up study of the treatment results, it was found (Table 3) that a year after the course, stable remission of clinical manifestations of VCI was noted in the control group in 43.5% of patients, in the main group - in 63.5% of respondents who sent questionnaires with answers. Three years later, a relapse of the disease was noted in 66.9% of patients in the control group and 47.0% of the main observation groups.

Thus, the presented author's methods of drug-free treatment of the studied group of patients reduce the number of latent and active MPTP, eliminate dystopia of the spinal motion segments of the cervical spine, normalize cerebral hemodynamics and cause regression of such resistant clinical manifestations of cervical MPBS as vestibulocochlear disorders. This technique is easily reproducible in the recreational zone of the Russian Black Sea region and can be recommended for widespread implementation.

Table 3

The effectiveness of the studied treatment regimens (%) in patients with vestibulocochlear disorders with cervical MFBS immediately, 1 and 3 years after its termination

Группы наблюдения	Эффективность лечения сразу после проведенного курса		Эффективность лечения при катамнестическом наблюдении			
			1 год		3 года	
	Улучшение	Без динамики	Ремиссия	Рецидив	Ремиссия	Рецидив
Контрольная группа Массаж + МТ (n=279)	27,4 (77)	72,6 (202)	43,5 (73) / 168	56,5 (95) / 168	33,1 (46) / 139	66,9 (93) / 139
Основная группа Массаж + МТ + Талассотерапия + + Морские процедуры + Бальнеотерапия (n=162)	46,3 (75)*	53,7 (87)*	63,5 (54)* / 85	36,4 (31)* / 85	53,0 (44)* / 83	47,0 (39)* / 83

Note: 1. * - the results are reliable (p <0.05) compared with the control group; 2. The absolute number of patients is indicated in brackets; 3. The denominator indicates the number of respondents-patients in the survey group who sent questionnaires with answers.

CONCLUSIONS

Elimination of active and latent MPTP and dystopias in the spinal motion segments of the cervical spine leads to the reverse development of the manifestations of the disease in 27.6% of cases. However, in 72.4% of patients this is not enough. For the correction of persistent vestibulocochlear disorders, additional treatment is required, aimed at eliminating the consequences of dyscirculatory and neurodystrophic disorders in the vertebrobasilar basin.

The use of the author's scheme for the complex treatment of vestibulocochlear disorders in patients of the main observation group using the natural and climatic factors of the Sochi resort (balneotherapy, thalassotherapy, sea procedures) leads to an improvement in the condition of the observed patients due to the intensification of blood flow (by 34.7%) in the vertebrobasilar system ...

The proposed author's scheme of complex treatment of patients with vestibulocochlear disorders using manual therapy and natural and climatic factors of the resort of Sochi statistically reliably (p <0.05) leads to a complete regression of the manifestations of the disease in 46.3% of the observed patients, reduces the number of relapses during a three-year follow-up.

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