

Case report



HERNIATED DISC TREATMENT BY PROF. G. GECHEV UNDERWATER LUMBAR TRACTION METHOD, OF A PATIENT REFRAINING FROM OPERATIVE TREATMENT WITH EMG, PROVED DEGENERATION OF L5-S1 ROOT

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ABSTRACT

Purpose: The purpose of this case report is to prove that Prof. Gechev's underwater spinal traction method is absolutely effective for treating vertebral syndrome in patients refraining from operative treatment.

Case Description: In this case, the patient is 27-year-old. In May 2013, for no apparent reason, he felt strong lower back pain and right foot pain with tingling down the ES 1 dermatome started on the right. He underwent inpatient and outpatient treatment with no result and increasing pain syndrome and a starting scoliosis. In July 2013 he fell and injured his lower back and was admitted to a neurosurgical ward presenting with severe lumbar pain. Referred for a lumbar spine MRI. The MRI scan established an L5-S1 disc herniation. The patient refused surgery. In August 2013 he was admitted for treatment at the Pavel Banya Medical Center in the town of Pavel Banya with increasing lower back pain and right foot tingling, difficulty walking on his own for more than 10-15 meters. In this case, were used 3 courses of 10 underwater lumbar spinal decompression procedures by the method of Prof. G. Gechev in Medical centre for rehabilitation that is adapted for these devices.

Result: Complete recovery of the work capacity and resolving complaints.

Conclusion: Underwater lumbar spinal decompression remains an effective, non-invasive method of treating vertebral syndrome in patients refraining from operative treatment.

Keywords: vertebrology, scoliosis, underwater lumbar spinal decompression, method of Prof. G. Gechev

BACKGROUND

The human spine – one of the perfect organs in the evolution of the animal world, supporting the body in an

upright position, is the indisputable result of the ape to human evolution. Despite its advanced evolutionary development, the human vertebral column still remains a rather troubled zone phylogenetically due to recurrent anomalies and diseases. Modern sedentary lifestyle caused by the ever-growing automation, computerization and technological progress has a rather negative impact on the locomotor system, especially the spine, and places Homo Sapiens in a certain “evolutionary stress” [1].

The human spine is designed to tolerate more dynamic than static loads, which determines its double S-shaped form. Thus the vertebral column acts as a spring, having the ability to withstand many times more stress than the straight form in other animal species. The unnatural conditions of immobilization for hours in a forced position lead to “a new” type of nonspecific stress – static stress, which is undoubtedly the main reason for the increase in vertebrogenic diseases and more frequent encounters at the general practitioner's office [2, 3].

The spine and its diseases have been the subject of numerous articles, but it is not a secret that different medical specialities have a different approach to spinal disorders, treating them partially and in different ways based on their characteristic specific methods and practices. For example: The radiologist describes the visible morphological changes without being interested in the function of the spine; The neurologist seeks the affected spinal cord, nerve roots, etc. without being interested in the dynamic and static functions of the spine; The orthopedist draws attention to morphological changes and the protective function of the spine, and neurosurgery is only interested in several spine segments. Here is the place of vertebrology with its holistic approach to the spine, to determine the condition or the deficit in its three basic functions - dynamic, static and protective [4].

The increasing incidence of vertebrogenic diseases

nowadays has made us summarize, by presenting this case, the present knowledge of normal and pathological spine conditions and the opportunities for noninvasive intervention treatment.

Scoliosis, or, in particular, scoliosis disease is characterized by a specific set of symptoms. The major one is the lateral curvature of the spine. This curvature alone is often called scoliosis. For centuries, the origin of scoliosis remains a mystery to medicine. Either way, etiology has not been explained so far. In the majority of cases, the diagnosis is idiopathic scoliosis, i.e. of unknown origin. The complexity of the etiology issue is explained by the fact that in one case, scoliosis occurs as a single disease, and in others as a symptom of a disease, whose origin is well known [5].

There are different classifications that systematize scoliosis based on etiological, morphological, neurological and other signs. Based on its etiology, scoliosis can be divided into congenital and acquired. The James classification (1979) divides scoliosis into two groups: without structural changes in the vertebrae and with structural changes in the vertebrae, which also cover the discs, the arches and the facet joints [6].

Lateral curvatures remain in the frontal plane only in the initial stages of development, the so-called functional scoliosis. This notion also comprises conditions such as irregular stance, pre-scoliosis, incorrect posture, etc. In functional scoliosis, morphological, body organs structural changes in bone, muscle, nervous and connective tissue are not detected. There are no spine mobility deficits. Spinal curvature in the frontal plane (scoliosis) leads to displacement of the nucleus pulposus of the intervertebral disc toward the convex side [7].

Gradually progressing functional changes lead to structural changes. In 1st-3rd and 4th degree scoliosis vertebrae are rotated in the direction of the curvature. In displaced vertebrae muscles that normally hold the spine upright start to bend it sideways because of the changed interrelation between the attachment sites. Changes in one region of the vertebral column spread to other regions as well. Primary spine curves lead to the formation of compensatory curves [8, 9].

AIM

The aim of the proposed report is to present a treatment method – underwater spinal decompression method of prof. G. Gechev at Pavel Banya Medical Center in a complicated case of a lumbar herniated disc, with subsequent trauma and absolute refusal of the patient to undergo surgery.

CASE DESCRIPTION

In this case, it was used the Prof. Gechev's method of underwater lumbar traction, which principles and mate-

rials are very important for the efficiency. The methodology is based on 3 essential orthopedic principles:

1. To relax the spine and body muscles in the aquatic environment.
2. Traction should be done with the maximum thrust, well tolerated by the patient, in an antalgic position.
3. After traction, the patient should be immobilized.

Description of Prof. Gechev's underwater decompression table and treatment protocol

It is a metal bed frame in the familiar antalgic position - on whose main supporting part are mounted three additional elements:

- top side - removable board.
- down side - fixed board.
- straps, belts.
 - a) thigh strap.
 - b) lumbar strap.
 - c) hip strap.
 - d) lower leg strap. *Optional.*
 - e) neck strap - *Glisson Sling.*

The second important material, in this case, is MRI of lumbar spine before and 4 months after the treatment.

The whole decompression table with a traction unit is immersed in a mineral hot water bathtub, and only the traction pulley system remains out of the water.

Underwater spinal decompression by the traction treatment method of Prof. Gechev has been in use since the 1960s in the Pavel Banya Spa Resort, with more than 200 procedures being carried out daily.

The method in its original version has been applied only in the Specialized Physical Therapy and Rehabilitation Hospital and the Pavel Banya Medical Center Ltd.

The patient held 3 courses of 10 underwater lumbar traction procedures.

The patient is a young 27-year old man with a sedentary profession, i.e. a 9-to-5 desk job. In May 2013, for no obvious reason, he experienced severe lower back pain. In a few days, the pains irradiated down the right leg with tingling along the ES 1 dermatome. He sought medical assistance from his GP who, without thorough examination and additional investigations, prescribed him the following: Baclofen 3 x 1, Milgamma 2 x 1, Pentoxifylline - 1 tab. PO QD for 5 days. The prescribed treatment did not have any particular effect. The lower back pain and the tingling in the leg increased to a degree of intolerable pain and inability to do the daily routine and take care of himself. The GP referred the patient for hospitalization. He was admitted for 7-day inpatient treatment. NSAID-administered therapy and IV fluids: Mannitol 2 x 250, Analgin 3 x 1 tab, Sodium Chloride 2 x 1 bag, Vit. C 2 x 1 amps etc. The treatment once again proved inefficient and without result, but with deepening pain syndrome and a beginning and

deepening kyphoscoliosis with concavity to the right side.

In July 2013 he fell from about 2 meters and injured his lower back and pelvis. He was admitted to a neurosurgical unit for severe pain at the lumbar spine injury sites. Eventually, the neurosurgeon referred the patient for a lumbar spine MRI.

The MRI findings were the following: Lumbar lordosis straightening; at L1-L2 level - no disk protrusion visualizes; at L2-L3 level - no disk protrusion visualizes; at L3-L4 level - no disk protrusion visualizes; at L4-L5 level - no disk protrusion visualizes; at L5-S1 level - central disc extrusion with compression of the thecal sac and both nerve roots. There is no secondary compression of the canal based on ligament and facet hypertrophy. Conclusion: Central disc extrusion at L5-S1.

The patient was offered an operative treatment of the herniated disc, which he absolutely refused. Subsequently, several physical therapy courses were conducted: Diadynamic Therapy, Interferential Current Therapy, Monophasic Pulsed Current Therapy and Phonophoresis – without result, with the deterioration of the condition.

In August he was admitted to the Pavel Banya Medical Center for examination and consultation. He presented with persistent lower back pain and tingling in the right leg, severe spine curvature making it impossible to walk on his own.

Fig. 1. Vertebral syndrome – scoliosis, rigidity, limited range of motion of the spine.



Physical examination on admission:

Stance – unable to stand – kyphoscoliotic. Gait – very difficult to walk on his own - no more than 10-15 m and with assistance. Extremely pronounced vertebral syndrome: ventral flexion of the spine up to 60 degrees; scoliosis (+++) on the left; rigidity of the paravertebral muscles (+++) on the right; trigger points symptom at L3, L4, L5, S1 (+) on the right; impossible lateral flexion bilaterally – with severe pain when attempting sideways bending; flexion in the lumbar region – Schöber's test 0 cm; Valleix's points 1,2,3,4,5 (+++) on the right; Lasègue's test (+) at 5 degrees. Deep tendon reflexes – right achilles reflex is absent. Hypesthesia at L4-L5 on the right. Reduced muscle strength in the right foot plantar flexion. No pathological reflexes were noted (Fig. 1.).

RESULTS:

The objective status after the second 10-day course of treatment was: Stance – upright, with slight kyphoscoliosis. Gait - difficult but does not need assistance. A slightly pronounced vertebral syndrome: scoliosis (+) on the left; rigidity of paravertebral muscles (+) on the right; trigger points symptom (-) bilaterally; mildly painful lateral flexion bilaterally; Schöber's test 3,5 cm; Lasègue's test (-); hypesthesia at L4-L5 on the right. Achilles reflexes D = S. He can stand on his toes and heels (Fig. 2.).

Fig. 2. A slightly pronounced vertebral syndrome.



Objective status after the third 10-day course of treatment: Slightly expressed residual compensatory scoliosis with concavity to the right, no rigidity of paravertebral muscles, Schöber's test 5 cm. No complaints of pain or tingling. Complete recovery for everyday routines and activities (Fig. 3.).

Fig. 3. Complete recovery for the vertebral syndrome.



DISCUSSION:

In recent years there has been a catastrophic increase in the incidence and severity of some socially significant debilitating diseases that seriously damage the patient's quality of life. On the other hand, assessing the negative effects of sedentary lifestyle with the ever-increasing automation and computerization of modern life, as well as the excessive use of strong medicines that have a very negative effect on the locomotor system, especially the spine, have recently led to cross the classical limits of orthodox medicine and to focus on the natural and traditional physical factors for spine disorders management [1, 2].

One of the most common spine disorders treated in Pavel Banya MC is disc herniation. This is a "standing man" disease, as Prof. Gechev says in one of his academic papers.

Between the vertebrae, there are cartilaginous cushions - disks serving as the spine's shock-absorbing system.

In the middle of this cartilage disc, there is a gel-like matter. In case of more serious mechanical damage to the structure of the cartilage disc, conditions are created to "squeeze" the gel-like substance to the periphery of the disc. Usually, at this stage, pain is felt only in the lower back – better known as "Lower back pain"[6]. However, if this matter undergoes more pressure, it can inflate the peripheral disc ring and form a "herniation" [6]. Normally, at this point, the inflated disc touches the adjacent nerve root, which is part of the nerve plexuses. This occurs most often in the cervical region as plexitis, in the thoracic region as intercostal neuralgia, and in the lumbar region as sciatica.

The most common cause of intervertebral disk damage is trauma, regardless of whether it is acute – fall, jumping, direct hit or chronic-overload, microtrauma, sedentary life, computerization, as is the case with our patient.

The clinical expression of this disease depends on the type of herniation – whether it is central or lateral. Most unfavorable are central disk herniations that can crush and damage the spinal cord in the cervical and thoracic regions [5]. Here the characteristic signs besides pain are sensory, motor, cardiovascular signs, etc., and in the lumbar region – besides motor disorders in the limbs – also disorders of the genitourinary system [7]. Usually, lateral disc herniations are the highest percentage of all herniations. Pain in such cases can be both in the lumbar region or along nervus ischiadicus [9]. A particular characteristic feature is the curvature of the spine – left, right or forward. In our case, the distortion is on the left.

Knowledge of disk herniation as a disease is especially necessary because it affects the most active, creative life stage and causes working disability, as is the case with this 27-year-old man.

The first and foremost task of conservative treatment is to correct and eliminate mechanical irritation of nervous tissue elements. This has been successfully resolved in Pavel Banya with the aquatic spinal decompression traction treatment. The case we present here is evidence.

CONCLUSION:

The case of our patient with a desk job, suffering from a herniated disc proves that sedentary lifestyle puts more stress and pressure on the lumbar region than upright stance. Working in a prolonged forced position requires some physical exercises to be carried out several times a day. To prevent spinal damage, it is necessary to acquire habits to stabilize the spine through physical efforts and sport, and to remember that a sedentary lifestyle is the enemy of man. Aquatic spinal decompression remains an effective, non-invasive method of treating vertebral syndrome in patients refraining from operative treatment.

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