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ANOMALIES OF L-S TRANSITION, THEIR RELATIONSHIP WITH PAIN SYNDROME

Buchakchyiska Nataliia
Professor, Doctor of Medical Sciences, Head of the Chair of Nervous Diseases of the State Institution "Zaporizhzhia Medical Academy of Postgraduate Education of the Ministry of Health of Ukraine"

Maramukha Volodymyr
assistant, Candidate of Medical Sciences of the Chair of Nervous Diseases of the State Institution "Zaporizhzhya Medical Academy of Postgraduate Education of the Ministry of Health of Ukraine"

Kutsak Andrii
Associate Professor, Candidate of Medical Sciences of the Chair of Nervous Diseases of the State Institution "Zaporizhzhya Medical Academy of Postgraduate Education of the Ministry of Health of Ukraine"

Maramukha Igor
Associate Professor, Candidate of Medical Sciences of the Chair of Nervous Diseases of the State Institution "Zaporizhzhya Medical Academy of Postgraduate Education of the Ministry of Health of Ukraine"

Maramukha Ievgenii
post-graduate student of the Chair of Gastroenterology, Physical and Rehabilitation Medicine of the State Institution "Zaporizhzhya Medical Academy of Postgraduate Education of the Ministry of Health of Ukraine"

Anomalies of the lumbosacral transition (L-S transition) of the ALST are a fairly common pathology in the development of the spinal column [5,6]. The relationship between the severity of pain vertebrogenic syndrome (PVS) at the lumbar level of the spine and anomalies of its development is not always traced. The opinions of the authors are often opposite, from the perception of anomalies as the main cause of pain in the spine to the complete disregard of this problem. Specialists involved in the treatment (PVS) also do not always attach importance to them, unless they are accompanied by a pronounced deformity of the spinal column [3]. Frequent types of ALST are non-closure of the arch of the lumbosacral vertebrae (spina bifida posterior), sacralization, lumbalization. In our work, we decided to consider the clinical and therapeutic aspects of these nosology's, firstly, as the most common in the clinical practice of a neurologist, pediatric neurologist, rehabilitation therapist, kinesiotherapist, chiropractor, and secondly, not requiring surgical interventions.

Anomalies can be both ontogenetic - anomalies of the bodies and arches of the vertebrae, and phylogenetic - a change in their number [4]. So, during the sacralization

of the fifth lumbar vertebra, the transverse processes come into contact with the lateral masses of the sacrum. Radiographically and functionally, there are only 4 vertebrae in the lumbar region. Sacralization can be either one-sided or two-sided. With lumbalization, the 1st sacral vertebra does not fuse with the sacrum. In this case, there are 6 vertebrae in the lumbar spine instead of 5. Lumbalization can also be either unilateral or bilateral. Spina bifida posterior (vertebral arches) is most often seen in the 1st sacral vertebra. Less commonly, the entire sacrum and 5th lumbar vertebrae are involved. Spondylolysis (bilateral cleft of the arch) is observed in the 5th lumbar vertebra [5]. Due to spondylolysis, the biomechanics of the lumbosacral spine changes, which leads to the development of spondylolisthesis [5,6].

Under our supervision there were 31 people with ALST aged 15 to 28 years (mean age 22±2.1 years). There were 22 men (70.97%), 9 women (29.03%). With spina bifida - 11 patients (35.48%), sacralization - 7 (22.58%), lumbalization - 9 (29.03%), spondylolysis - 4 (12.91%). All patients underwent a standard examination: collection of complaints, anamnesis, general clinical and neurological examination, MRI of the lumbosacral spine, x-ray spondylography in 2 projections, if necessary with functional loads. PVS was assessed on the VAS scale (from 8 to 5 points), the quality of life index according to SF36. The range of motion in the lumbosacral spine was determined according to the methods of A. Stoddard [9]: in all patients with pain syndrome against the background of ALST, a functional block (FB) of the 2nd degree from 2 to 4 vertebral motor segments (VMS).

One of the effective methods of treating ALST are the methods of kinesiotherapy and their main component, manual therapy [7].

We used: traction in the position of the patient lying on his stomach using post-isometric relaxation (PIR; traction of the lumbar spine in the supine position with bent knees; mobilization on the lumbar spine in the position lying on the side and neutral posture; mobilization on the lumbar spine in lying on the side in kyphosis with the lower leg bent and the upper leg hanging freely from the edge of the table (K. Lewit) [8]. PIR of the rectus dorsi muscle; PIR of the trunk rotator muscles; PIR of the iliopsoas muscle; PIR of the gluteus maximus muscles; PIR of the piriformis muscle; mobilization of the lumbar spine in rotation with flexion and extension; mobilization in rotation of the lumbar in combination with neuromuscular therapy; traction of the lumbar with extension and flexion; mobilization of the lumbar spine in traction using PIR (V. Gubenko) [1]. Mobilization of the lumbar spine during extension; mobilization of the lumbar spine during extension (I. Dovgyi) [2]. We also used the techniques developed by us in the form of muscle relaxant corrective therapy.

The effectiveness of treatment was determined by a combination of its criteria (a decrease in the severity of PVS according to VAS to 0-3 points, a decrease in the degree of blocking in the VMS up to the disappearance of FB, an improvement in the index of quality of life). The best treatment success rates were in patients with spina bifida - 93%, sacralization - 86%, spondylolysis - 82% and with lumbalization - 79%.

Clinical example as an illustration of treatment. Patient S., 22 years old, driver. He complained of intermittent pain in the lumbar spine. Pain is associated with physical activity, prolonged stay in an uncomfortable position, hypothermia. Also worried about the feeling of constant discomfort in the lumbar region.

From the anamnesis it is known that he first felt pain in the lower back at the age of 14, after a sudden movement. At that time, he did not seek medical help. In the future, the frequency of occurrence of PVS increased. Occasionally took analgesics, non-steroidal anti-inflammatory drugs. Exacerbation 4 days ago after weight lifting.

On examination: flattened lumbar lordosis. Fb L4-S1 arl (D,S) 2 st. by A.Stoddard. Pain on palpation of the paravertebral muscles at the level of L3-S1. Tendon reflexes D=S, no sensory disturbances. Positive symptoms of Neri, Lasegue from 2 sides at an angle of 45 degrees. The PVS on VAS is 7 points.

On radiographs of the lumbosacral spine in 2 projections + functional loads and MRI-grams: osteochondrosis, ALST in the form of spina bifida posterior S1, protrusion of the discs L4-L5, L5-S1.

The patient underwent 9 kinesiotherapy sessions, after which the PVS according to VAS regressed to 0-1 points, the range of motion in the blocked VMS was restored. Tension symptoms are negative, palpation of the paravertebral muscles in the lumbar spine is painless.

Thus, we came to the conclusion that it is possible to recommend the proposed kinesiotherapy technique for the treatment of PVS in patients with ALST.

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