

NEWS

Neck Pain Symposium, Sestre milosrdnice University Hospital, Zagreb, Croatia October 2, 2008

Spinal diseases are among those diseases that do not only cause pain and other sufferings to patients, but are also one of the biggest sociomedical problems. Neck pain, along with back pain, is one of the most common causes for seeking medical assistance, sick-leave and absenteeism from work, and use of health insurance. Cervical spine is one of the most complicated articulated structures in the body, and as we move it about 600 times *per* hour, it is under increased daily stress. There are many causes of neck pain; however, in clinical practice the exact cause cannot be determined most of the time. Although it is commonly considered a self-limiting disease, new data point to frequent relapses of neck pain, which can most likely be attributed to sedentary lifestyle. Diagnostic and therapeutic procedures of modern medicine are rooted in evidence based medicine. That is why a symposium entitled Neck Pain: From

Causes to Rehabilitation was held on October 2, 2008 in multimedia hall of Sestre milosrdnice University Hospital in Zagreb. The Symposium was organized by the Croatian Society of Vertebrology in association with University Department of Rheumatology, Physical Medicine and Rehabilitation and University Department of Neurosurgery, Sestre milosrdnice University Hospital. The aim of the Symposium was to present data and discuss the causes, diagnosis, treatment and rehabilitation of patients suffering from neck pain, including assessment of the prognosis and outcome, with special reference to the results of therapeutic conservative and operative methods and procedures.

The Symposium was chaired by Professor Simeon Grazio, MD, PhD, head of the University Department of Rheumatology, Physical Medicine and Rehabilitation, Sestre milosrdnice University Hospital, and Damir Kovač, MD, PhD, neurosurgeon from University Department of Neurosurgery, Sestre milosrdnice University Hospital, president of the Croatian Society of Vertebrology. Symposium lectures were presented by 21 experts in the field of vertebrology.

The symposium on spinal diseases and conditions has already become a tradition. It was initially organized by University Department of Neurosurgery, then by the Croatian Society of Vertebrology. Ten expert conferences have been organized so far, first called courses on spinal surgery. Later on, these courses grew into a symposium to more comprehensively deal with conservative aspects of diagnosis and treatment of spinal diseases and conditions. Since 2004, these symposia and public lectures have been used to institutionally celebrate the World Spine Day, all within the activities of the Bone and Joint Decade 2000-2010, as announced by the World Health Organization.

Since previous symposia mostly dealt with lumbar spine, this time the principal topic was cervical spine. Like in previous years, the Symposium gathered a large number of participants (around 120), physicians of various specialties (physiatrists, neurosurgeons, surgeons,



psychiatrists, orthopedists, general practitioners, etc.). It was especially nice to see colleagues from all over Croatia, from Varaždin to Ploče, and from Istria to Osijek.

Upon the introduction by Professor Krešimir Rotim, MD, PhD, director of Sestre milosrdnice University Hospital; academician Marko Pećina, coordinator of the National Committee for Bone and Joint Decade; and heads of the Symposium, the first lecture on the epidemiology of neck pain was presented by Zoja Gnjidić, MD, MS, from Drago Čop Polyclinic for Rheumatic Diseases in Zagreb. In her lecture, she pointed to the great importance of neck pain from the point of view of an individual and the society. Clinical epidemiological studies show that 80% of the active population have experienced some sort of neck and arm pain and stiffening. In the past thirty years, in western countries, there has been an increase in the prevalence of neck pain caused by whiplash injury. According to statistical data, the prevalence of neck pain without pain spreading to upper limbs at any stage of monitoring is 12% in adult female population and 9% in adult male population (ranging from 9% to 18%).

The second lecture, given by Darko Perović, MD, PhD, from University Hospital of Traumatology in Zagreb, was about functional anatomy of cervical spine. Dr. Perović pointed out that anatomically and functionally, cervical spine has two important parts, i.e. upper and lower cervical complex, with very different roles. When the complex central and peripheral nervous system is also taken in consideration, there is a "whole science". Congenital anomalies, development and degenerative processes, trauma, infections and tumors of this com-

plex system result in numerous disease entities of the musculoskeletal and nervous systems.

Then a lecture on the causes and clinical picture of cervical and cervicogenic syndromes was presented by Professor Vida Demarin, MD, PhD, and Lidija Dežmalj-Grbelja, MD, from University Department of Neurology, Sestre milosrdnice University Hospital. In her lecture, Dr. Dežmalj-Grbelja said that cervicogenic syndromes can manifest themselves as radiculopathy, myelopathy or radiculomyelopathy. Acute syndromes are mostly caused by sudden disk herniation, whereas spondylotic changes are caused by gradually emerging symptoms. The symptoms can be caused or worsened by a sudden cervical trauma like hyperextension dislocation or fracture or continuation of the vertebrae, which is more common in elderly people, especially those with osteoporosis or flattened cervical lordosis. On differential diagnosis when dealing with patients suffering from cervical and cervicogenic syndromes one should consider amyotrophic lateral sclerosis, demyelination disease of the central nervous system, spinocerebral degeneration or syringomyelia.

A lecture delivered by Frane Grubišić, MD, from University Department of Rheumatology, Physical Medicine and Rehabilitation, Sestre milosrdnice University Hospital, offered the audience important information on a very important practical subject, i.e. clinical examination of patients suffering from neck pain. Due to varying symptoms and search for a potential cause of neck pain, it is very important to have a good case history and clinical examination, functional assessment of the neck and, if needed, of the whole locomotor system. Emphasis was put on detecting so-called "red flags", serious



causes that necessitate immediate evaluation and treatment.

Radiologic tests can be of great help to make an accurate diagnosis, i.e. finding the causes of neck pain. It was the subject of a lecture given by Igor Borić, MD, MA (with Professor Miljenko Marotti, MD, PhD as co-author). A whole array of diagnostic radiologic methods are available, each of them having some importance, advantages and limitations. Sometimes the methods are self excluding, but they often supplement each other while making a definitive diagnosis. To choose the appropriate radiologic method that will give us the most complete insight into the problem it is important to have a good knowledge of their possibilities, clear clinical inquiry and, most of all, good cooperation between the clinician and the radiologist who should be the leaders of the diagnostic team.

Assoc. Professor Ivan Mikula, MD, PhD, from University Department of Neurology, Sestre milosrdnice University Hospital, talked about the role of electromyoneurography (EMNG) in patients with cervical and cervicogenic syndromes. This method has its place in the diagnostic procedure. Needle electromyoneurography has a sensitivity of 50%-71% in diagnosing cervical radiculopathy, however, its specificity is low. There is good correlation between EMNG results and radiologic test results. If there is any reason to suspect damage to a particular spinal root (based on clinical examination or initial EMG analysis), additional tests are performed.

The first part of the Symposium was ended by a lecture on psychological-psychiatric aspects of neck pain. The lecture was given by Professor Danijel Buljan, MD, PhD, head of the University Department of Psychiatry,

Sestre milosrdnice University Hospital. Professor Buljan pointed out that every painful and especially chronic painful disorder like frequent neck pain has a more or less noticeable psychological background. Sometimes neck pain is a symptom of hypochondria, depression or a psychotic disorder. On the other hand, neck pain as a somatic disease can cause anxiety, depression, social phobia and isolation. That is why successful treatment of neck pain is not possible without holistic, integrative and interdisciplinary team approach.

The second part of the Symposium was opened by Professor Simeon Grazio, MD, PhD, from University Department of Rheumatology, Physical Medicine and Rehabilitation, Sestre milosrdnice University Hospital, who talked on the psychiatric-rheumatologic approach in neck pain treatment. With modification of activities, localized heat and cold, electrotherapy, pulsed electromagnetic fields, therapeutic ultrasound, laser, acupuncture, massage, medicinal gymnastics, EMNG-biofeedback, traction, various kinds of manual medicine and drugs (usually nonsteroidal antirheumatics and pure analgesics) are most commonly used in patients suffering from neck pain. Therapy should be matched to the cause of neck pain, and neck pain is most commonly nonspecific. Until there is stronger evidence from controlled randomized studies, a theoretical basis with careful monitoring of response in each individual patient seems to be a rational approach in the non-pharmacological treatment of neck pain.

Tomislav Nemčić, MD, from University Department of Rheumatology, Physical Medicine and Rehabilitation, Sestre milosrdnice University Hospital, talked about exercise therapy as the most valuable part of physical



therapy. There are various exercises that include those specific to the neck or shoulders, active exercises, stretching exercises, strengthening exercises, postural exercises, eye-fixation exercises and proprioceptive exercises. The application of exercise therapy requires active participation of the patient in the treatment, which makes them most responsible for treatment outcome.

Based on recent studies on the efficiency of exercise therapy in mechanical neck pain and neck pain accompanied by headache and radiculopathy, it is concluded that exercise therapy is much more effective than no treatment at all. This especially holds for stretching exercises and/or strengthening exercises of the neck and shoulder muscles, as well as for eye-fixation exercises. However, according to literature data, it is not clear which kind of exercise therapy is most efficient. Also, it is not known how the success of therapy is affected by the length and intensity of exercise and what is the importance of patient motivation for exercise and supervision by physiotherapist.

Michael Šantek, a chiropractor from Zagreb, presented a lecture on cervical spine manipulation and its influence on the proprioceptive system. Chiropractic uses specific procedures and techniques that can be manipulative and non-manipulative. The function and goal of chiropractic is to optimize the disrupted spinal function and to have a preventive effect on patient health. Furthermore, its function is to slow down the degenerative changes by stimulating the receptors that activate the gamma-motor circuits and modulate muscle activity, and are responsible for stabilization of joints needed for dynamic stability. It is important to note that postural mechanisms are also influenced by the gamma-motor activity.

The next was the topic of surgery and the way it can be used in managing neck pain. Professor Krešimir Rotim, MD, PhD (coauthors Robert Saftić, MD, MS, and Nenad Kudelić, MD) from University Department of Neurosurgery, Sestre milosrdnice University Hospital, talked about surgical possibilities for treating cervical intervertebral disk hernia. The treatment includes decompression and stabilization procedures, bearing in mind that in most cases stabilization procedures imply decompression of nerve structures. The gold standard of the neck spondylosis surgery is fusion microdiscectomy with or without additional stabilization. It is also the most commonly performed cervical spine surgery. Along with microdiscectomy, decompression of anterior neural structures is achieved by vertebral corpectomy. These

are the two most common anterior cervical spine surgeries.

Owing to advancements in technology, minimally invasive procedures in cervical spine treatment have been gradually replacing some of the standard methods of surgical treatment. They do not need any additional fusion or instrumentation since their goal is decompression of neural structures with disk preservation. The most common minimally invasive cervical spine surgeries are anterior endoscopic discectomy and posterior micro- or endoscopic foraminotomy.

Vatroslav Čerina, MD, from University Department of Neurosurgery, Sestre milosrdnice University Hospital, with Ivan Radić, MD, Karlo Houra, MD, and Dario-Josip Živković, MD, as coauthors, presented their own results of cervical spine surgery for cervical intervertebral disk herniation. They analyzed the results of anterior neck approach in 110 patients operated on with or without instrumentation on one or more neck segments during the 2004-2007 period. Reoperation was required in only six patients, four of them having been previously operated on with and two without fixation plate. Clinical monitoring of patients in the postoperative period did not indicate any significant difference in fusion between patients operated on with instrumentation using a bolted plate and those operated on without the plate. The authors have concluded that anterior microdiscectomy is a safe and effective surgical method with a very low rate of complications (transient hoarseness, temporary swallowing difficulties) and 90% satisfactory postoperative results.

It was followed by a lecture on the principles of treatment of cervical spine deformities and tumors. The lecture on this very difficult and challenging issue was delivered by Professor Vladimir Kovač, MD, PhD, from University Department of Orthopedics, Dubrava University Hospital in Zagreb. In surgical treatment of tumors, the main problems are hypervascular tumors and the issue of vertebral arteries. That is why team work with a cytologist, pathologist, oncologist and radiologist has become an imperative. In 20% of cases, congenital spinal deformities lead to neurologic episodes, therefore timely diagnosis before severe deformities have developed is especially important. "Non-fusion techniques" are more often used in young children, whereas correction osteotomy and wedge resection are used in adults. Therefore, it is necessary to use specific implants and instruments as well as intraoperative neuromonitoring.

And the last but certainly not the least important lecture at the Symposium was that on the subject of patient rehabilitation after surgical treatment of cervical spine. The lecture was presented by Tatjana Nikolić, MD, from University Hospital of Traumatology in Zagreb. Dr. Nikolić emphasized the importance of individualized rehabilitation treatment, while considering the biomechanical, physiologic and psychosocial needs of the person through daily activities. Each rehabilitation procedure starts by getting the patient to stand up straight on the first postoperative day and walking according to individual tolerance. Some surgical procedures entail postoperative wearing cervical orthosis. Prolonged use of cervical orthosis is connected with additional development of muscle atrophy and loss of sagittal balance of the cervical spine. Upper and lower limb exercises, isotonic exercises of leg joints, isometric exercises of abdominal, gluteal and lower limb muscles and,

very careful strengthening upper limb musculature exercises are performed. Cervical spine exercises can be initiated when the stability of the operated segment allows it, or upon removal of orthosis. The final goal of stabilizing cervicothoracic training is to establish endurance and coordination of the neck musculature. Later, postural control enhancement training is performed, along with stretching and flexibility of neck and shoulder exercises.

The lectures were followed by productive discussion (moderated by Professor S. Grazio and Dr. D. Kovač) and nice reception.

The participants of the Neck Pain: From Causes to Rehabilitation Symposium have certainly gained new insights or answers, which will entail the best possible care of their neck pain patients. So we hope that, in the years to come, there will be more successful symposia like this one.

Tomislav Nemčić