Lumbosacral radiculopathy

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Lumbar radiculopathy (LR) often manifests as pain in the low back radiating into one leg (sciatica).

This radiculopathy characterized by radiating pain into a part of the leg typically served by one nerve root in the lumbar or sacral spine.

Epidemiology

The estimated annual incidence of radicular syndrome in The Netherlands is 9 cases per 1000 adults per year [1].

Etiology

Radicular pain in lumbar region is a symptom which can have many causes such as herniated nucleus pulposus, migrated disc fragment, lumbar stenosis, facet joint syndrome, malignancy and/or infection.

The development of severe lumbar radicular pain and sciatica depends on both mechanical compression and concomitant chemical irritation of the nerve root caused by disc material [2] [3] [4].

Pathophysiology

The pathophysiology of lumbar radiculopathy includes both mechanical compression and biochemical irritation of apposed neural elements. Inflammatory and immune cytokines have been implicated,

induced by systemic exposure of immune-privileged intervertebral disc tissue. Surgical intervention provides improved symptoms and quality of life, but persistent postoperative neuropathic pain (PPNP) afflicts a significant fraction of patients. OBJECTIVE:

To compare the inflammatory and immune phenotypes among patients undergoing structural surgery for lumbar radiculopathy and spinal cord stimulation for neuropathic pain. METHODS:

Consecutive patients undergoing surgical intervention for lumbar radiculopathy or neuropathic pain were studied. Demographic data included age, gender, and VAS and neuropathic pain scores. Serum was evaluated for cytokine levels (IL-6, Il-17, TNF-α) and cellular content [white blood cell (WBC)/differential, lymphocyte subtypes]. The primary analysis differentiated molecular and cellular profiles between radiculopathy and neuropathic pain patients. Subgroup analysis within the surgical radiculopathy population compared those patients achieving relief of symptoms and those with PPNP.

Heightened IL-6, Il-17, and TNF-α levels were observed for the lumbar radiculopathy group compared with the neuropathic pain group. This was complemented by higher WBC count and a greater fraction of Th17 lymphocytes among radiculopathy patients. In the lumbar discectomy subgroup, pain relief was seen among patients with preoperatively elevated IL-17 levels. Those patients with PPNP refractory to surgical discectomy exhibited normal cytokine levels.

Differences in Th17 immune activation are seen among radiculopathy and neuropathic pain patients. These cellular and molecular profiles may be translated into biomarkers to improve patient selection for structural spine surgery [5)].

Treatment

Lumbosacral radiculopathy treatment

Outcome

The course of radicular syndrome is favorable, with resolution of leg pain within 3 months from onset in the majority of patients.

During the first few weeks post-onset treatment focusses on pain relief.

Besides pain medication, transforaminal, fluoroscopic injections with corticosteroids can be chosen. Transforaminal, fluoroscopic injections with glucocorticoids are safe and effective compared to placebo.- The position within the treatment protocol for radicular pain of epidural steroid injections has yet to be determined based upon further scientific knowledge.

Lumbar radiculopathy, like other forms of radiculopathy, results from nerve root impingement and/or inflammation that has progressed enough to cause neurologic symptoms in the areas that are supplied by the affected lumbar nerve root(s).

see sciatica.

Case series

Thirty-six patients, aged from 18 to 45 years, with lumbosacral radiculopathy associated with connective tissue dysplasia were examined. Detailed neurological examination, X-ray visualization and MRI of lumbosacral spine section, electromyographic assessment were performed. A five-point scale of neuro-vertebrological symptoms, the Numerical Rating Scale (NRS) and the Roland-Morris Low Back Pain and Disability Questionnaire were used.

The results contained own data on the pathogenesis, clinical manifestations and treatment of dorsopathies in connective tissue dysplasias. Inclusion of long-acting pentoxifylline (vasonite) in the combined therapy in patients with dorsopathy associated with connective tissue dysplasia had a positive effect on disease course, decreased pain intensity and improved life activities [6].

1)
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