CLINICAL INVESTIGATION

A Brief Overview of Complex Regional Pain Syndrome

Submitted: 25 July 2021; Accepted: 10 August 2021; Published online: 17 August 2021

Anette Jacobs*

Editorial Office, Clinical Investigation, London, UK

*Author for correspondence: clininvest@journalres.com

Perspective

Complex Regional Pain Syndrome (CRPS), often called reflex sympathetic dystrophy, is a collection of painful disorders characterised by chronic regional pain that appears to be unrelated to any known trauma or other lesion in terms of duration or severity. Complex regional pain syndrome is caused by changes in the somatosensory systems, which interpret noxious, tactile, and temperature information, the sympathetic systems, which innervate skin structures such as blood vessels and sweat glands and the somatomotor systems, which control movement. The changes suggest that the models of the central nervous system have been revised. The peripheral nerve system of patients with complicated regional pain syndrome is aberrant. The most common symptoms include pain (spontaneous pain, hyperalgesia, and allodynia), active and passive movement disorders (including increased physiological tremor), abnormal regulation of blood flow and sweating, oedema of skin and subcutaneous tissues, and trophic changes of skin, skin organs, and subcutaneous tissues. The complex regional pain syndrome is characterised by inflammation caused by nerves release of certain pro-inflammatory chemical signals, sensitised nerve receptors that send pain signals to the brain, dysfunction of the local blood vessels ability to constrict and dilate appropriately, and maladaptive neuroplasticity.

The signs and symptoms of a convoluted regional pain system frequently manifest themselves close to the injury site. The most common symptoms are severe pain, such as burning, stabbing, grinding, and throbbing. In comparison to the intensity of the initial injury, the agony is excessive. In most cases, moving or touching the limb is impossible. Patients with type I or type II complex regional pain syndrome may suffer excruciating pain as well as allodynia (pain to non-painful stimuli). Both illnesses have autonomic dysfunction, which presents as localized temperature swings, cyanosis, and/or edoema. These criteria are easy to use and were developed with clinical use in mind. These criteria, however, are still overly sensitive and lack specificity for scientific research, and a more limited definition, as proposed by Bruehl and colleagues, should be embraced. Complex regional pain syndrome presents a characteristic clinical picture of sensory, motor, and autonomic symptoms. The following sections will go over these symptoms in further detail. The figures are based on the results of a research of more than 450 individuals with complicated regional pain syndrome conducted by our department.

Pain and hyperalgesia are the most common symptoms. 75% of patients reported aching, burning, pricking, and occasionally shooting pain when at rest. In the majority of cases, the pain is felt deep within the affected extremity. Nearly all of the patients (100%) complained of hyperalgesia. After a thorough investigation of hyperalgesia, it was determined that hyperalgesia to mechanical impact (pinprick) stimuli exists. Complex regional pain syndrome is distinguished from other chronic pain syndromes by the presence of signs showing significant autonomic and inflammatory abnormalities in the pain location. Complex regional pain syndrome is distinguished from other chronic pain syndromes by the presence of signs showing significant autonomic and inflammatory abnormalities in the pain location. Patients with the most severe form of the disease have a limb with extreme hyperalgesia and allodynia (normally non-painful stimuli such as touch or cold are perceived as painful), noticeable changes in skin colour, skin temperature, and sweating compared to the unaffected side, edoema and altered hair, skin, or nail growth patterns in the affected region; reduced strength, tremors, and dystonia. Reduced limb positioning accuracy, delays in determining limb laterality, abnormal referred sensations and tactile perception, and altered subjective mental representations of the diseased limb are all possible indicators of poor body perception and proprioception.

Mechanical hyperalgesia explains the motion dependent amplification of pain in all people with complex regional pain syndrome.

According to current basic scientific knowledge, central sensitization may produce mechanical hyperalgesia in complex regional pain syndrome. This is especially true for the third of patients with allodynia (pain caused by a brush), such as those with chronic regional pain syndrome. Although no specific diagnostic test exists for complex regional pain syndrome, a range of tests can help with diagnosis, nonetheless, the most important role of testing is to rule out other disorders. When there are vasomotor symptoms and signs, vascular testing is recommended to rule out a vascular aetiology. Although no specific diagnostic test exists for complex regional pain syndrome, a range of tests can help with diagnosis; nonetheless, the most important role of testing is to rule out other disorders. When there are vasomotor symptoms and signs, vascular testing is recommended to rule out a vascular aetiology. Certain neuropathic illnesses, such as peripheral neuropathy, entrapment neuropathies, and nerve injury, can be ruled out by electrodiagnostic tests. In the general population, complex regional pain syndrome is uncommon, although it affects 4% to 7% of those who have had a limb fracture or surgery. Acute CRPS is characterised by a warm, red, and edematous appearance that generally goes away with no intervention. Complex Regional Pain Syndrome (CRPS) becomes a chronic condition in a subset of individuals, usually accompanied by a change in look to one that is chilly, dark, and sweating