

DIAGNOSIS AND MANAGEMENT OF COMPLEX REGIONAL PAIN SYNDROME (CRPS)

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INTRODUCTION

CRPS may be considered a functional disorder of the spinal cord that involves to varying degrees the dorsal and ventral horns, as well as the inter mediolateral columns, so as to produce sensory, motor, and autonomic abnormalities¹. CRPS may be triggered by a variety of insults such as trauma, surgery, inflammation, stroke, nerve injury, and immobilization. The syndrome occurs frequently in young adults and more in women than men. No correlation exists between the severity of injury and the resulting painful syndrome². Patients with certain neoplasms of lung, breast, central nervous system, ovary and patients suffering from stroke or myocardial infarction may exhibit signs and symptoms of CRPS. Even psychological stressors and poor coping skills can influence the natural history and severity of CRPS³.

CASE REPORT

18 years old female presented to us with painful swelling of her right hand for the last 5 months. Pain was gradual in onset, became more severe with the passage of time and was constant in nature. It was aggravated by movements or even with light touch, and to other stimuli like vibrations. She was unable to extend her fingers of right hand and pain was involving the whole right arm. Patient was unable to perform any function with right hand; pain was associated with dryness and feeling of cold sensations of right hand. She had history of admission for abscess right side of face one year ago and venous cannulation in ipsi-lateral arm at cubital region.

Her family and personal history was non-contributory. General physical examination and systemic examination was within normal limits.

On local examination there was edema of right hand, flexion contracture fingers and right thumb, erythematous color changes and inability to move right hand and arm. Temperature was lowered than left hand. Her baseline investigations including serum uric acid were normal. RA factor found to be negative. X-rays showed diffuse osteoporosis.

On history clinical examination and investigations diagnosis of complex regional pain syndrome CRPS-II with median nerve injury was made. She did not responded to analgesics so treatment started with Tab. Amitriptyline 25mg tds, Tab. Gabapentin - started with 100mg tds & maintained at 300mg tds and stellate ganglion block on alternate days for two weeks. Intravenous regional blocks for next two months on alternate days Physiotherapy and exercises were also advised.

DISCUSSION

CRPS is a neuropathic pain, but not all neuropathic pains are CRPS. There are two variants of complex regional pain syndrome. CRPS-I and CRPS-II. In case of CRPS-I there is no clinically detectable nerve injury but in CRPS-II clinically detectable major nerve injury is found which involves most commonly sciatic and median nerves.

Although several pathophysiological mechanisms have been postulated for CRPS but the disease is still poorly understood. A phenomenon of neuro-pathic pain has been described due to nerve injuries which are major and clinically detectable in case of CRPS-II and minor in CRPS-I. Previously it was thought that there is sympathetic over- activity but in recent studies many believe that there is dysfunction of sympathetic nervous system.

There is central thermo-regulatory dysfunction because of enhanced sudomotor activity and central sympathetic inhibition. Adrenergic hypersensitivity causes reduction in venous catecholamine in affected limb and receptor up-regulation due to sympathetic

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inhibition and nerve injury⁵. CRPS is a clinical diagnosis lab tests may confirm the diagnosis. These investigations may be helpful in diagnosis of CRPS. Quantitative sensory testing (QST). A sympathetic function test includes; peripheral vasoconstrictor reflex, sudomotor function tests, sympathetic skin response. Neurophysiologic Procedures; nerve conduction velocity (NCV), somatosensory evoked potentials, electromyography (EMG). These are painful procedures and may worsen CRPS. These tests have no exclusive diagnostic value and may be omitted⁶. Imaging methods includes: Radiography in which diffuse osteoporosis or severe patchy demineralization can be seen. Three-phase bone scan (TPBS) is useful for non-trauma patients but does not offer sufficient accuracy. Magnetic Resonance Imaging (MRI) is not a useful screening method it may help in differential diagnosis. The successful treatment of complex regional pain syndrome (CRPS) is very challenging⁷. Multidisciplinary approach is adopted that includes; integrated functional restoration. Evidence-based pharmacotherapy.

Psychological interventions. Interventional therapies, implanted therapies. Miscellaneous and experimental therapies. Acute CRPS is treated with oral corticosteroids (prednisolone, methylprednisolone), calcitonin and nifedipine.

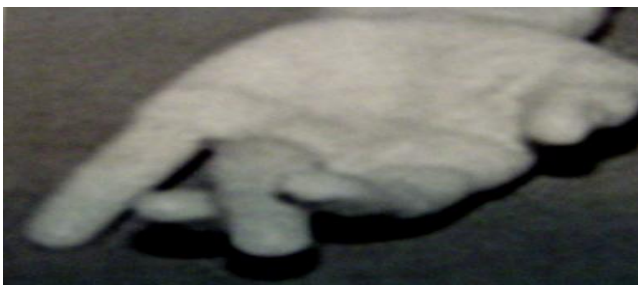
In chronic CRPS pain is relieved by tricyclic antidepressants, anticonvulsants, opioids and topical local anaesthetics. Traditional interventional therapies, intravenous regional anaesthetic blocks and continuous I/V infusions are also has definite role in the treatment of CRPS.

CONCLUSION

CRPS is a highly complex, less understood, disabling disease process. Its treatment is diverse, but no single treatment is uniformly effective. It needs a trained and alert mind to diagnose correctly. Multidisciplinary approach is mandatory for management. A patient, informed, and skillful physician is required to get satisfactory results⁸.

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