Sudeck’s Osteodystrophy - Case Report


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Abstract: Sudeck’s osteodystrophy also known as complex regional pain syndrome is a chronic systemic disease characterized by severe pain, swelling and changes in the skin. It often initially affects an arm or a leg and often spreads throughout the body. It is a multifunctional disorder with clinical features of neurogenic inflammation, nociceptive sensations or allodynia, vasomotor dysfunction, and maladaptive neuroplasticity generated by an aberrant response to tissue injury1. Treatment is complicated involving drugs, physical therapy, psychological treatment and neuro modulation and usually unsatisfactory especially if began late 2. We hereby report the successful management of an adult female patient who presented with features of sudeck’s osteodystrophy with combination of various treatment modalities.

Keywords: Sudeck’s osteodystrophy, Stellate ganglion block, treatment modalities

1. Introduction

CRPS –formerly reflex sympathetic dystrophy (RSD) or causalgia is a chronic systemic disease. It is a multifactorial disorder associated with disregulation of the CNS and ANS resulting in multiple functional loss, impairment and disability. The international issue for study of pain has proposed dividing CRPS into two types based on presence of nerve lesion following the injury.

Type I, formerly RSD/Sudeck’s dystrophy does not have demonstrable nerve lesion, majority of the patient are diagnosed with this type.

Type II, formerly known as causalgia has evidence of obvious nerve damage. It tends to be more painful and difficult to treat.

Since the causes are multifactorial, management is complicated involving drugs, physical therapy, psychological treatments and neuromodulation. We report the successful pain management of an adult patient diagnosed with symptoms of sudeck’s osteodystrophy.

2. Case Report

A 38 year old female patient was referred to us from orthopedic department with the complaints of pain and swelling of right wrist and hand since one week, with a probable diagnosis of sudeck’s osteodystrophy. Detailed history revealed that the patient had a history of fall from height; forty days back at her residence and had injury to the right forearm. She was diagnose d with fracture distal radius and was treated conservatively with cast application at a peripheral hospital. Later after the removal of cast, she presented with above complaints. There was no past history of any medical illness.

On local examination, the right hand and forearm was edematous, skin over the site was dry and erythematous, and temperature was low compared with the other hand. Extreme tenderness was present and she was unable to move the fingers. Possible diagnosis of sudeck’s dystrophy right upper limb was made and she was planned for elective continuous stellate ganglion block right side with other medical line of treatment for pain control. Meanwhile she was started on analgesics, antidepressants (Tab.Tryptomer 10 mg) and T. Vitamin C OD orally. Routine blood investigation carried out was within normal limits. Elective stellate ganglion of block right side was carried out under C arm guidance (figure 1) and local anesthetics drug combination of Inj. Xylocard 2% 2cc, Inj. Bupivacaine 0.25% 2 cc and Inj. Fentanyl 25 mcg diluted to 10 cc with normal saline was given. A 20G cannula was kept at the stellate ganglion site for continuous supplementation of local anesthetic drugs.

Post procedure patient became symptomatically better as evidenced by decreased edema and venodilatation, increased warmth of the skin, decreased pain and ability to move the fingers. She was hemodynamically stable throughout the procedure with mild ptosis on right side which recovered spontaneously. She was supplemented with the drug combination of Inj Xylocard 2% 2cc, Inj. Bupivacaine 0.25% 2 cc and Inj. Fentanyl 25 mcg diluted to 10 cc, every eight hours for first three days through the cannula under strict monitoring(Figure 2). She was also supplemented with intravenous inj Ketamine infusion of 50mg over four hours once a day.
CRPS remains a clinical diagnosis without any specific laboratory or radiological test. The more common precipitating event of CRPS type I are a trauma affecting the distal part of an extremity (65%) especially fractures, post surgical condition, contusions, and strain or sprain. Less common causes are CNS lesions including spinal cord injuries, CVAs, as well as cardiac ischemia. Weakness of all muscles of the affected distal extremity is often present. Nerve conduction and EMG studies are normal, except in patients in very chronic and advanced stages. Patients with CRPS may develop movement disorder like loss of voluntary control, bradycardia, dystonia, myoclonus and tremor. The symptoms of CRPS type II are similar to those of CRPS I with exception that a lesion of peripheral nerve structure and subsequent focal deficits are mandatory for the diagnosis. Pathophysiology of CRPS I includes an unregulated sympathetic nervous system, an exaggerated neurogenic inflammation, a genetic predisposition and immobilization of the limb (disuse).

4. Therapy guidelines

Treatment should be immediate and eventually directed towards restoration of full function of the extremity. This objective is best attained with particular emphasis on minimization of pain, restoration of function and improvement on quality of life. Interestingly, relative pain reduction of at least 50% and 30 mm on the 100mm VAS are judged to the result of a “successful” therapy. Immobilization and careful contra lateral physical therapy should be the acute treatment of choice. (First time analgesic opioids and antidepressants. Additionally, corticosteroids should be an option). Blocks of the sympathetic nervous system include addressing component of the SMP (sympathetically mediated pain), repeated stellate ganglion blocks, lumbar sympathetic blocks, spinal cord stimulation, and continuous intrathecal drug delivery system. Newer techniques include Radiofrequency neurlysis and endoscopic thoracic sympathectomy.

5. Conclusion

CRPS is a severe disabling pain disorder that results in physical as well as emotional and financial consequences to patients. It is often associated with significant disability.
anxiety and depression. New development in drugs and devices should continue and make spinal cord stimulation and the neuraxial routes of analgesia are very promising for into the future.

References


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