

Complex Regional Pain Syndrome After Carpal Tunnel Release: A Case Report

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INTRODUCTION:

Carpal tunnel syndrome (CTS) is a condition caused by compression of median nerve in the wrist leading to pain and loss of function in hand. Carpal tunnel release (CTR) by division of transverse carpal ligament is the treatment of choice with 75% of patients experiencing good outcome.^[1] Complex regional pain syndrome (CRPS) is a condition characterised by constant regional neuropathic pain associated with abnormal sensory, autonomic, motor and trophic pain with a reported incidence of 5.5 to 26 cases per 100 000 person years.^[2] CRPS after CTS is rare with an incidence of 8.3%.^[3] This article describes a lady with bilateral CTS treated with left CTR and developed left hand CRPS.

CASE REPORT:

A 51-year-old lady who had bilateral carpal tunnel syndrome with severe thenar muscle wasting, underwent left carpal tunnel release (CTR) after two years of failed conservative treatment. The surgery lasted for 10 minutes under local anaesthesia without tourniquet. Intraoperative, noted transverse carpal ligament is fibrosed and the median nerve is flattened.

6 weeks after surgery, she reported about vasomotor (cold sensation) and motor symptoms (stiffness) over left hand, and was suspected to have CRPS. She was started on physical therapy; fluidotherapy, transcutaneous electrical nerve stimulation (TENS), wax bath and range of motion (ROM), as well as pharmacological therapy: opioid, antidepressant and one gram of Vitamin C daily. She was then diagnosed to have CRPS, 3 months after surgery when she complained about new vasomotor (redness) and sudomotor symptoms (increased sweating).^[2] Her condition started to show improvement after 4th month and she was able to return to work 11 months after surgery.

DISCUSSIONS:

Budapest clinical diagnostic criteria for CRPS has a sensitivity of 99% and specificity of 68%.^[2] Aim of treatment of CRPS is pain control followed by recovery of limb

function.^[4] A retrospective cohort study involving 102 patients with at least 2 years of CRPS reported 30% complete recovery, 16% severe progressive disease, and 54% with stable symptoms. Among the 54 patients who were working before they developed CRPS, 41% resumed their former job, 28% with some adjustment, whereas 31% were completely incapable to work.^[4] In the absence of efficacious treatment, prevention of CRPS is preferable. A meta-analysis of 4 published studies suggested that vitamin C significantly reduced likelihood of CRPS from developing after limb injury or surgery.^[2]

Figure 1. Redness and swelling of the left hand (3 months after CTR)



Figure 2. Resolved swelling and redness with full ROM of left hand (11 months after CTR)



CONCLUSION:

The diagnosis of CRPS after CTR may be delayed due to the complexities in its pathophysiology, presentation and variable progression. Early diagnosis and prompt treatment is of paramount importance in preventing the condition to progress into chronic state and thus securing good clinical outcome. Vitamin C should be considered in patient with severe CTS after a CTR surgery.

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