

77. RECURRENCE OF COMPLEX REGIONAL PAIN SYNDROME AFTER SURGERY: BENEFICIAL EFFECTS OF A PERIOPERATIVE STELLATE GANGLION BLOCK

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Introduction: Complex Regional Pain Syndrome (CRPS) is a disorder in which the pain and dysfunction are disproportionate in severity or duration to those expected from the initiating event (1). The usual features are pain (spontaneous or evoked), vasomotor and/or sudomotor instability, sensory, and trophic changes (2). Surgery on an extremity affected with CRPS is generally avoided because of the risk that the symptoms will recur or worsen (3). Perioperative sympathectomy of the affected extremity has been recommended in the management of such patients (3). A stellate ganglion block, which interrupts sympathetic tone in the ipsilateral upper extremity, may benefit CRPS patients who require hand surgery (3). However, there are no data supporting the hypothesis that performing a perioperative stellate ganglion block reduces the recurrence rate or exacerbation of symptoms of CRPS. This retrospective study examined the clinical efficacy of performing a perioperative stellate ganglion block in patients with a previous history of CRPS who underwent upper extremity surgery by one of two surgeons.

Methods: 100 patients with the diagnosis of upper extremity CRPS who underwent surgery of the affected extremity were included in this retrospective study approved by our Institutional Review Board. All patients presented with spontaneous or evoked pain out of proportion to the inciting event. The pain symptoms resolved after treatment with a sympathetic block. In addition, at least four of the six following signs or symptoms were present: sensory changes including allodynia and hyperesthesia, vasomotor changes, sudomotor changes, temperature difference (10 C) between extremities, diffuse edema, and limited active range of motion (ROM). All patients were referred to the Pain Management Center (PMC) for diagnosis and treatment of CRPS prior to surgical intervention. Treatment modalities included a series of stellate ganglion blocks and/or intravenous regional anesthesia (IVRA) blocks. All signs and symptoms of CRPS (with the exception of ROM limitations) had resolved prior to the time of surgery. The medical charts of 100 patients with the diagnosis of CRPS who presented for surgical procedures of the upper extremity between the years 1993 and 1998 were included in this study. All procedures were performed under IVRA using 40 mL 0.5% lidocaine on the same extremity where the CRPS symptoms were present. After the surgical procedure a stellate ganglion block was performed on the side of the affected extremity (stellate group) in the post anesthesia care unit. The control group received no sympathetic intervention. All patients were followed in the PMC at one and three months postoperatively by one physician (SSR) to determine whether there was any recurrence of the signs or symptoms of CRPS.

Results: 100 patients meeting the criteria for CRPS were included in this study. 78 were female and 22 were male. Surgical procedures included: carpal tunnel release (n=34), tenolysis (n=23), tendon release (n=19), capsulotomy (n=12), arthrodesis (n=8) and excision of neuroma (n=4). There were no differences in demographic variables, operative or tourniquet times (Table 2), or surgical procedures (Table 3) between the two groups. The average time interval between PMC treatment of CRPS and surgery was 4 - 16 months (median 7 months) in the stellate group and 5 - 13 months (median 8 months) in the control group (P = 0.92). Overall, the recurrence rate of CRPS was 41% (n=41). The recurrence rate of CRPS was significantly lower (P<0.001) in those patients receiving a postoperative stellate ganglion block (10%, n= 5) compared to the control group (72%, n=36). The remainder of the patients in the stellate group (90%, n=14) and the control group (28%, n=14) remained symptom-free with no evidence of recurrence during the 12 month period following their operative procedures.

Conclusion: Our work clearly demonstrates an advantage to performing a perioperative stellate ganglion block in CRPS patients undergoing upper extremity surgery. The recurrence rate of CRPS fell significantly from 72% to 10% when a stellate ganglion block was performed in this patient population.

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