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CLINICAL CASE REPORT

Complex Regional Pain Syndrome Type 1 Relieved by Acupuncture Point Injections with Placental Extract

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Abstract
This is a case report of a female patient who developed complex regional pain syndrome in the left upper limb after a traumatic injury to the distal part of the left forearm. The pain was immediate and resistant to oral analgesics and continued transcutaneous electrical nerve stimulation. Five months after the injury, the patient presented to our clinic with severe pain, swelling, redness, cold sensation of the left hand, and loss of function from the left hand up to the left shoulder. Acupuncture points LI5, LU2, SI10, HT1, GB21, and SI11 (which are localized in the joints or in the muscles responsible for the movement of the left upper limb) were selected for the application of the placental extract. Injection of placental extract into the acupuncture points resulted in dramatic pain relief, swelling remission, motor recovery, temperature normalization, and disappearance of redness in this patient with complex regional pain syndrome type 1.

1. Introduction

Complex regional pain syndrome type 1 (CRPS1) is a complex disease characterized by severe pain, swelling, motor deficit, and changes in the skin and annexae. The pathophysiology of CRPS1 remains unclear. However, studies have suggested that neurogenic inflammation has a key role in the signs and the symptoms of CRPS1 [1,2]. Some reports indicate reduced pain in patients with CRPS1 after long-term acupuncture treatment [3—6]. However, other parameters of inflammatory reactions such as swelling, mobility, temperature, and redness do not seem to be improved by long-term acupuncture treatment.

The injection of a dilute drug solution into the acupuncture points has been used recently to maximize the therapeutic effect of acupuncture [7,8]. In adjuvant-induced polyarthritic rats, injecting placental extract

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especially at acupuncture points alleviates arthritic symptoms, including joint destruction and the expression of inflammatory cytokines [8]. In addition, the intra-articular injection of placental extract reduces deformity in knee joints and inhibits the matrix metalloproteinase-2 and metalloproteinase-9 activities in the cartilages of osteoarthritic knee joints in rats [9]. In this research study, we examined the therapeutic effect of injecting a placental extract into the acupuncture points in a patient with a disease involving inflammation, CRPS1.

2. Case Report

A 42-year-old woman with an injury to the distal part of the left forearm and a 2-day history of acute pain went to a pain physician's clinic. She was administered transcutaneous electrical nerve stimulation on the affected limb and the oral analgesic, dexibuprofen. She was treated for 4 months; however, passive movement or active movement exacerbated the pain from the wrist to the shoulder. Five months after the injury, she presented to our clinic with severe pain, swelling, redness, a cold sensation in the left hand, and extremely restricted mobility in the left wrist and shoulder joints. A radiologic test showed no signs of a fracture in the left forearm. Further examination revealed no clinical signs of nerve injury or sympathetic hyperactivity such as nail thickness and sudomotor activity. Her subjective symptoms of burning pain and edema at the site of the injury, joint stiffness, restricted mobility, and changes in the color and temperature of the skin at the extremities satisfied the criteria for CRPS1 by the International Association for the Study of Pain. Localized swelling was present at the site of the injury, but the swelling had not spread to other regions; hence, she was diagnosed as having stage 1 CRPS1.

Human placental extract (Laennec, Green Cross), obtained under the regulations of the Korean Food and Drug Administration (Seoul, Korea), was purchased from Green Cross Ltd. (Yongin, Korea). After the patient provided informed, written consent, the extract was weekly injected into acupuncture points LI5, LU2, SI10, HT1, GB21, and SI11 in the left upper limb (Fig. 1). Two milliliters of placental extract were injected into acupuncture points LI5, LU2, SI10, and HT1 by using a plunger with a 26-gauge needle, whereas 1 mL of placental extract was injected into acupuncture points GB21 and SI11. A needle was inserted into acupuncture point LI5, which is localized on the radioscaphoid joint of the left hand, and the extract was administered in the space of the joint. At acupuncture points LU2 and SI10, which are localized on the anterior and the posterior scapulohumeral joint, respectively, a needle was inserted to a depth of 25 mm into the tissues overlying each acupuncture point. At acupuncture points HT1 and SI11, the tips of the needles were placed on the subscapularis and the infraspinatus muscles, respectively. For acupuncture point HT1, a 2-inch-long needle was employed especially to stimulate the subscapularis muscle from the axillary fossa. Injection into acupuncture point GB21 was carefully performed by gripping the trapezius muscle and inserting the needle from the posterior to avoid piercing the lung.

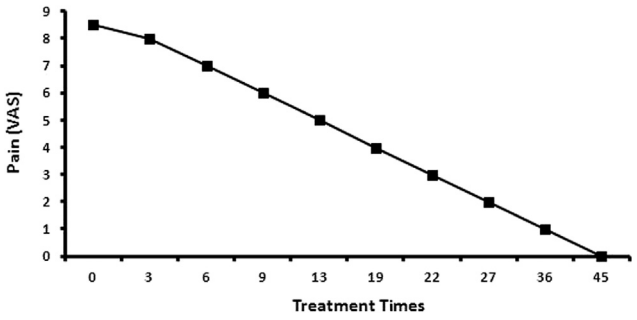

Figure 2 Effect of injecting placental extract at acupuncture points on pain. VAS = visual analog scale.

The patient's pain score was recorded by using the visual analog scale (VAS) on which a score of zero indicates "no pain" and a score of 10 indicates "the worst pain possible." The patient was asked to indicate her feeling of pain by drawing a vertical line on a 10-cm VAS prior to the placental extract injection and every week thereafter. Her initial VAS score was 8.5. The VAS score decreased with repeated

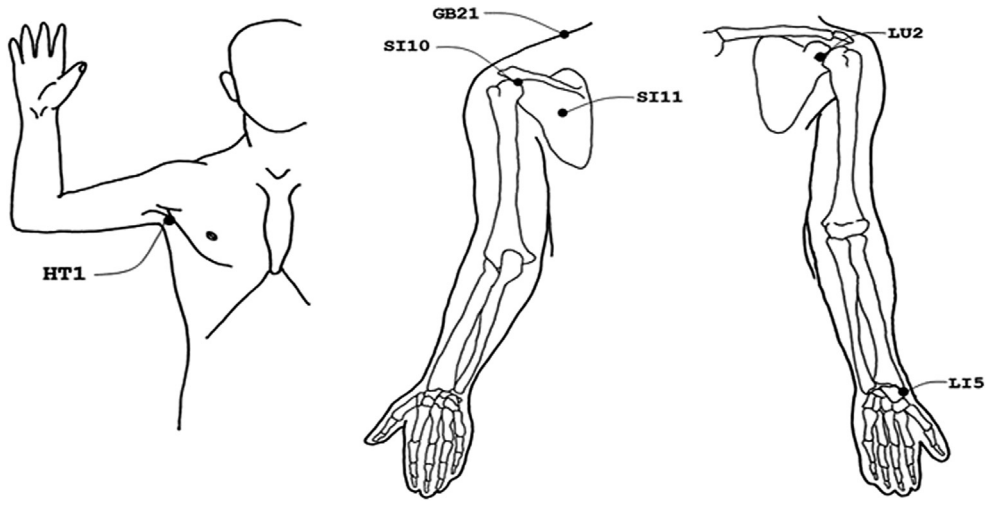

Figure 1 Upper extremity acupuncture points.