Acupuncture for Pediatric Complex Regional Pain Syndrome
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Introduction

Complex regional pain syndrome (CRPS) is characterized by continuous spontaneous or evoked pain that is disproportionate to the inciting event. The efficacy of commonly performed procedures for CRPS is low; local anesthetic sympathetic blockade treatment provides complete pain relief in only less than one third of patients, and some patients do not experience full recovery even after receiving all conventional therapies.1 Since the NIH's 1997 consensus statement on the effectiveness of acupuncture,2 acupuncture has become increasingly integrated with Western medicine. It is an effective noninvasive treatment for chronic pain in adults and children.3-5 Previous studies and case reports have found that in adult patients with CRPS who were treated with acupuncture, pain, function of extremities, and quality of life improved.3,6 There is little information on the effects of acupuncture treatment on children with CRPS. We conducted a retrospective case series investigating the clinical course and treatment response to acupuncture in two children with CRPS who were referred to a tertiary pediatric pain clinic.

Methods

The patients were referred for acupuncture treatment once per week and received treatment for 5-10 sessions. Written parental acupuncture treatment consent was obtained prior to treatment. NRS and the Brief Pain Inventory were utilized to monitor the patient's progress. The patients were referred for acupuncture treatment once per week and received treatment for 10 sessions. Written parental acupuncture treatment consent was obtained prior to treatment. NRS and the Brief Pain Inventory were utilized to monitor the patient's progress.

Case 1

An eleven-year-old girl had acute onset of left medial foot pain during ballet class. A plantarflexion movement elicited sharp pain and gave her immediate swelling. She was placed in a cast for two weeks, but the pain worsened. Her MRI was consistent with CRPS. Physical therapy gave minimal improvement. Her medications included lidocaine ointment, Voltaren gel, and Neurontin. The patient's pre-treatment pain score was 8/10. She felt that the first acupuncture treatment was beneficial and had decreased pain for 3 days after the treatment. At follow-up one week later, her average pain decreased to 7/10. After the second session, her average pain was 5/10. At the third session, the patient continued to feel that the acupuncture treatment was helpful, and she had decreased pain for a few days after treatment. Her pain interfered less with her general activity, mood, relations with other people, and sleep. At follow-up during the sixth session, she no longer had discoloration along the medical aspect of her left foot and ankle. She no longer needed her medications. Compared to the prior week, she reported that her pain interfered less with her general activities, walking ability, and sleep. She had no adverse side effects to acupuncture. Overall, the six sessions of acupuncture treatment helped to alleviate her symptoms of CRPS and decreased her pain score from a pretreatment value of 8/10 on the NRS scale to 5/10.

Case 2

A twelve-year-old boy was diagnosed with a nondisplaced left tibial plateau fracture after a skiing accident. Two months later, he started inaccurate growth and had an insidious onset of left medial foot pain. He was rated at 8/10 on NRS. He was in a boot for a month but did not improve. His MRI was consistent with CRPS of the left ankle. Other than physical therapy and water therapy, he received no medications. He was referred for 3 weekly sessions of acupuncture. Before treatment, the patient's average pain was 7/10. By the second visit, his average pain decreased to 2/10, and he had improved CRPS symptoms. At the fourth session, he felt very well, and his pain no longer interfered with his general activities or enjoyment of life. He was able to participate in sports. After the third session, the patient's pain decreased to 0/10. His pain no longer impeded his walking ability, and he was able to train for lacrosse tryouts. By the fifth treatment, he was doing well regarding his left ankle CRPS-related pain and symptoms. He denied discoloration or temperature changes in his leg.

Cases

Discussion

CRPS is a chronic pain condition that causes great pain and suffering and significantly hinders quality of life. In children with CRPS, the recurrence rate is 50%1 and relapses may even be more severe than the original CRPS occurrence.4 For the children who experience high relapse rate or complete pain to conventional treatment, other treatment modalities should be considered.5 As people are diagnosed with chronic disease conditions like CRPS that are difficult to treat, they are increasingly turning to complementary medicine.6 This case series describes an integrative approach for treating pediatric CRPS. The two pediatric patients experienced a positive healing experience from acupuncture while simultaneously undergoing conventional medicine. Complementary medicine is an appealing adjunctive treatment for CRPS because successful management of the syndrome utilizes a multidisciplinary regimen.7 In addition to conventional treatments like pharmacological and interventional treatment,8 physical therapy, cognitive behavioral therapy,9 we hope that acupuncture can be used to facilitate the healing processes for children with CRPS.

Conclusion

There is a paucity of data on the effectiveness of acupuncture in the pediatric CRPS population. The present case report of three children with CRPS had a decrease in NRS pain score and symptomatic improvement following acupuncture treatment that was integrated with conventional treatment strategies. Acupuncture is safe to implement in children,10 and the patients in this case series had no adverse side effects. Our report suggests that a combination of acupuncture and conventional medicine is a potentially valuable approach in modern pain therapy for children with CRPS. Future prospective RCTs are necessary to evaluate further the clinical effectiveness and viability of acupuncture in the pediatric CRPS management.

References