

Acupuncture treatment in supracondylar fracture of the left humerus

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Abstract

The humerus is a long bone in the upper limb that forms the shoulder joint above and the elbow joint below, where it articulates with projections of the ulna and the radius. According to TCM, fractures of any kind can be treated with acupuncture. Acupuncture treatments can be started after all acute care steps have been completed, such as x-rays, surgery, medication for pain management, etc. The key treatment principles for fractures are to relieve swelling, move or activate blood, eliminate pain, promote the regeneration of bone and soft tissues, prevent recurring weakness in that area, and enable a faster return to normal activities. This article presents a case of a 19-year-old boy with a left humerus fracture he acquired while skiing three years ago. He came to our clinic one and a half year after his injury because he couldn't pick up his thumb, and the power of movement in his left hand was reduced. Over a period of one year, he underwent nine acupuncture treatments. Before the treatments, the patient, on the doctor's recommendation, did physical therapy and exercises. After acupuncture treatments, he began to feel better, with more strength in his hand, better sensation, and improved mobility in his thumb. Acupuncture, as a part of TCM, provided significant improvements in the speed and quality of healing in cases of humeral fractures.

Key words: Acupuncture, TCM, fracture, humerus, bone

Introduction

The humerus is a long bone in the upper limb or forelimb of land vertebrates that forms the shoulder joint above and the elbow joint below, where it articulates with projections of the ulna and the radius. Fractures are the most common injury to the humerus and often occur due to a direct blow to the bone. The bones in the arms or hands are more likely to be broken because these parts of the body are commonly used.

Humerus fractures are classified by their location and they can be divided to proximal-break that occurs at the end of the humerus closet to the shoulder, mid-shaft or middle-break that occurs in the shaft of the humerus, distal - a break that happens at the end of the humerus closest to the elbow. [1]

Distal humerus fractures include the supracondylar fractures, single condyle fractures, bi-column fractures and coronal shear fractures. Treatment options include open reduction and internal fixation, closed reduction and percutaneous pinning, and intramedullary nailing or bracing. During injury, open reduction and internal fixation or intramedullary nailing may occur radial nerve palsy. Distal humerus fractures have less positive outcomes. [2]

The clinical appearance of the patients with distal humerus fracture can be summarized as a painful swollen elbow after an injury, also skin lesions can occur posteriorly, where bone is located right under the skin. [3]

According to Traditional Chinese Medicine (TCM) theory, the treatment for a bone fracture includes three periods of treating. When a bone fracture occurs, there is swelling of the tissue around the fracture and pain, which accords with the "blood stasis" and "qi stagnation" pattern. The aims of TCM are to quicken the blood, transform stasis, and promote movement of qi to relieve pain and reduce swelling. After this period passes, there is a middle period in which the site of the fracture is still weak and tender because

the bone and sinews have not yet connected. In the middle period, the aims of TCM principles are to join the bone, soothe the sinews, and harmonize the construction of new sinews and bone. The last or late period is marked by the fracture initially healing but not yet solid. The muscles near the fracture site are atrophied due to the immobilization of the extremity. The strength and function in the fracture site have not yet been recovered, which accords with the "deficiency in both qi and blood" and "liver-kidney depletion" pattern. The aim of TCM is to nourish the blood, supply qi, enrich the kidney and liver, and strengthen the bone and sinew to recover normal function in the affected area in the late period. [4]

Case report

The presented case in this research is a 19-year-old boy who suffered from a supracondylar fracture of the left humerus while skiing three years ago. He came to our clinic one and a half year after the injury because he was unable to pick up his thumb and had reduced mobility power in his left hand. His EMG findings support a chronic, partial sensorimotor lesion of n.ulnaris I n.radialis sin. Despite undergoing intensive interventions, physical therapies, and exercises, he was still unable to lift his thumb up and had reduced mobility power in his left hand. Over the course of one year, he received nine acupuncture treatments. The therapies were not administered more often because the patient lives in another country. After the acupuncture treatments, he began to feel better, with increased strength in the hand, improved sensation, and greater mobility in the thumb.

The acupuncture treatments were done at an acupuncture and TCM clinic in Skopje, North Macedonia, by a doctor a specialist in acupuncture. The treatments lasted between 30-45 minutes and were conducted indoors at room temperature using fine sterile disposable needles sized 0.25x25mm. The acupuncture points used in the treatments are: GB20 (Fengchi), LU2 (Yunmen), LI 15 (Jianyu), LI14 (Binao), LI11 (Quchi), PC5 (Jianshi), SI9 (Jianzhen), LI4 (Hegu), PC7 (Daling), HT8 (Shaofu), PC8 (Laogong) and SI3 (Houxi).

Acupuncture therapy, with a history spanning over 2000 years, is considered one of the most valuable contributions to the field of traditional Chinese medicine. Its therapeutic effects are characterized by the insertion of fine, solid metallic needles into or through the

skin at specific areas, which activates the tendons and vessels, promotes bone growth, and enhances the healing process.

In TCM, internal disharmony among bodily functions and between the body and nature can lead to blockages of the body's vital energy, known as qi, which flows through 12 primary and 8 secondary meridians. According to the TCM classic "Nei Jing," the kidney system comprises the kidney, bone, marrow, and brain. In this holistic theory, the kidney is believed to control bones in the body. Unlike the modern medical concept of kidneys, the TCM idea of kidneys is more like a method of characterizing a group of interconnected components than a physiological organ.

Bone regeneration is a sophisticated biochemical process that begins with localized hemorrhage and inflammation, followed by the production of cartilage, soft extracellular matrix tissue, and new bone through the complex actions of mesenchymal progenitor cells. TCM in healing musculoskeletal disorders focuses the attention on the total influence of the patient's body on the bone lesions, rather than just local therapy as in Western treatment. Therefore, TCM uses both interior therapies, such as herbal medication, and external therapies, such as acupuncture, food therapy, exercise (qigong) therapy, and massage (tui na). TCM is a discipline of conventional treatment based on more than 2,500 years of Chinese healthcare profession. [5] [6] [7]

Conclusion

Acupuncture, as a component of TCM, is a highly effective treatment for humerus fractures, providing positive outcomes and successfully improving health.

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Conflict of interest

The author have declared that no competing interests exist.

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Statement of Informed Consent

Written informed consent was obtained from the patients for her anonymized information to be published in this article.

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