

침 치료로 호전된 특발성 척추 측만증 환자의 증례보고

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Adult Idiopathic Scoliosis Treated by Acupuncture : A case report

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목적: 이 증례 보고는 성인 특발성 측만증 환자에 있어서 등의 통증과 척추 만곡에 대한 침 치료의 효과를 보고하기 위한 것이다.

방법: 증례의 환자는 25세 여자 환자로 9년 동안 우측 흉추 측만증과 등과 허리의 통증이 있었다. 1주일에 3번, 3주간 침 치료를 시행했고, 치료 전후로 Whole spine x-ray를 촬영하였으며, 환자의 통증 정도를 Visual Analog Scale(VAS)로 평가하였다. 내원시 Cobb angle은 22°였고, 관상면 균형은 -3.0cm, 쇄골각은 -3.5°였다. VAS 8의 통증을 호소하였다.

결과: Cobb angle은 5° 감소하였고, 관상면 균형은 1.4cm, 쇄골각은 1.7° 회복되었다. 등과 허리의 통증은 VAS 8에서 VAS 3으로 감소하였다.

결론: 침 치료는 특발성 척추 측만증 환자에 있어서 등과 허리의 통증뿐만 아니라 척추 측만을 개선시키고 관상면 균형 회복에도 효과적이다.

중심단어: Idiopathic Scoliosis, Acupuncture, Cobb Angle, Coronal Balance, Backache

I. Introduction

Adult scoliosis can be defined as a spinal deformity in a skeletally mature patient with a Cobb angle greater than 10°. Scoliosis during childhood and adolescence that may progress or become symptomatic as the patient ages, also called adolescent scoliosis of of the adult (ASA)¹⁾. It is now well established that untreated scoliosis in the adult

can lead to back pain, muscle fatigue and the psychological effects of living with a visible deformity²⁾. Most common conservative therapies are medication, bracing, physical therapy, and manipulation³⁾.

There were few studies concerning the treatment of adult idiopathic scoliosis by acupuncture. I present a case of a patient with adult idiopathic scoliosis with a Cobb angle of 22° and negative coronal balance of 3.0cm,

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negative clavicle angle of 3.5° , which was reduced to 17° , 1.6cm, 1.8° , respectively after 3 weeks of acupuncture treatment.

II. Case Report

A 25-year-old woman complained of episodic low back pain for 9 years, aggravated by prolonged standing or sitting. Her family history was negative for scoliosis. Upper and low back pain worsened starting in her middle school years. Soon, she was taken to the orthopedic clinic for evaluation, and the spine x-ray film showed right thoracic scoliosis. Her back pain was treated with non-steroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, and physical therapy in the orthopedic outpatient service. Because her back pain was relieved only when she went to the clinic, she stopped the treatment for last 6 years and her back pain became chronic. So, the patient chose the conservative treatment of acupuncture.

On physical examination, a right posterior rib hump was noted. A local tenderness in the right thoracic and left lumbar region was observed by palpation. She reported her pain score was VAS 8. There was no neurological deficit in the lower extremities. In the frontal plane, she also displayed a high right shoulder. A supine leg check revealed no significant length discrepancy. Given these preliminary findings, a whole spine film study was ordered to locate and calculate the nature and severity of the scoliosis. The radiographs showed a 22° right thoracic scoliosis, measured from the superior endplate of the T6 vertebra and the inferior endplate of the T11 vertebra. Coronal balance and clavicle angle also measured, it was negative 3.0 cm, negative 3.5° , respectively (Fig. 1.).

The patient began a treatment course of three visits per

week for 3 weeks. Goals of treatment included (1) improvement of spine alignment, and (2) reduction in pain and symptoms.

I based the acupuncture point selections on Traditional Korean Medicine (TKM) meridian theory to treat back pain. In TKM the spine and back are closely related to the meridians of Kidney (KI) and Bladder (BL)⁴⁾. The acupuncture points were KI3, BL40, BL60, bilaterally. I also used ah shi points or local tender points, depending on the patient's pain distribution and palpation of the right upper back and left lower back region. In most sessions, 8-12 local points were used. The depth of needle insertion varied with thickness of the skin and muscles at the site of the acupuncture points; it was usually 1-1.5 cm. A disposable acupuncture with a 0.25×40 mm stainless steel needle was inserted, followed by the reducing and reinforcing method to get de qi sensation (defined as a feeling of heaviness around the acupuncture point) in each session, and the needles were left in place for a total of 30 minutes.

After 3 weeks of this treatment, the patient reported a decrease in her upper and low back pain from VAS 8 to VAS 3, and follow-up radiographs showed an improvement in right thoracic scoliosis and coronal balance (Fig. 2.). The Cobb angle of the right thoracic scoliosis was measured 17° , the coronal balance was negative 1.6 cm, the clavicle angle was negative 1.8° (Fig. 2.). The patient discontinued acupuncture treatments because of her private work.

III. Discussion

Thoracic curves that measure greater than 30° tend to progress. But small curvatures in this case seldom progress in an adult⁵⁾. So, conservative care like physical and exercise therapy or acupuncture may be a helpful

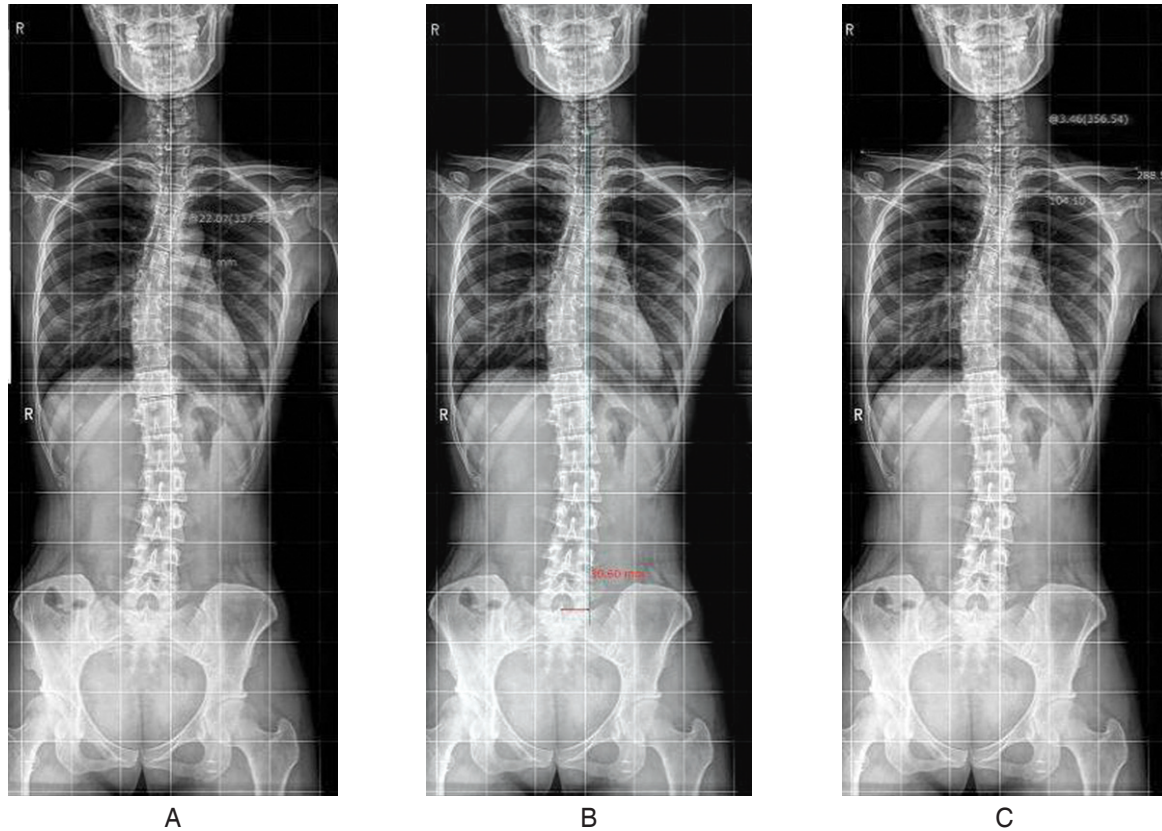


Fig. 1. Whole spine x-ray before treatment. (A) Cobbs angle, 22° , is obtained by measuring the maximal angle from the superior endplate of T6 vertebra to the inferior endplate of the T11 vertebra. (B) Coronal balance, negative 3.0 cm, is measured as distance between C7 plumb line and central sacral vertical line. (C) Clavicle angle, negative 3.5° , is formed by the intersection of a horizontal line and the tangential line connecting the highest two points of each clavicle.

option in the care of this patient. But evidence is lacking in this area. The current level of support is limited to extremely small case reports and expert opinion³⁾.

I conducted a literature search and found that there are few studies reported of the treatment of scoliosis by acupuncture. A single blind study showed that acupuncture seemed to have an influence on the deformity of adolescent idiopathic scoliosis patients with curves less than 35° ⁴⁾. Another study showed a 10° decrease in curvature of an old woman with degenerative scoliosis treated with acupuncture for 6 weeks⁶⁾. But, in that case, they used only Cobb angle to evaluate the

curvature. Thus, I present a case report of adult idiopathic scoliosis patient treated by acupuncture. Also, I used coronal balance and clavicle angle as well as Cobb angle as a evaluation method.

The Cobb angle is the most commonly used and most accurate measurement of spinal curvature. But, it does not correlate with the degree of morbidity or pain. The degree of reduction of the Cobb angle does not correlate with patient satisfaction in postoperative outcome surveys. The concept of coronal balance is critical to the evaluation of spinal deformity. Coronal balance is measured on an upright anteroposterior view. A plumb

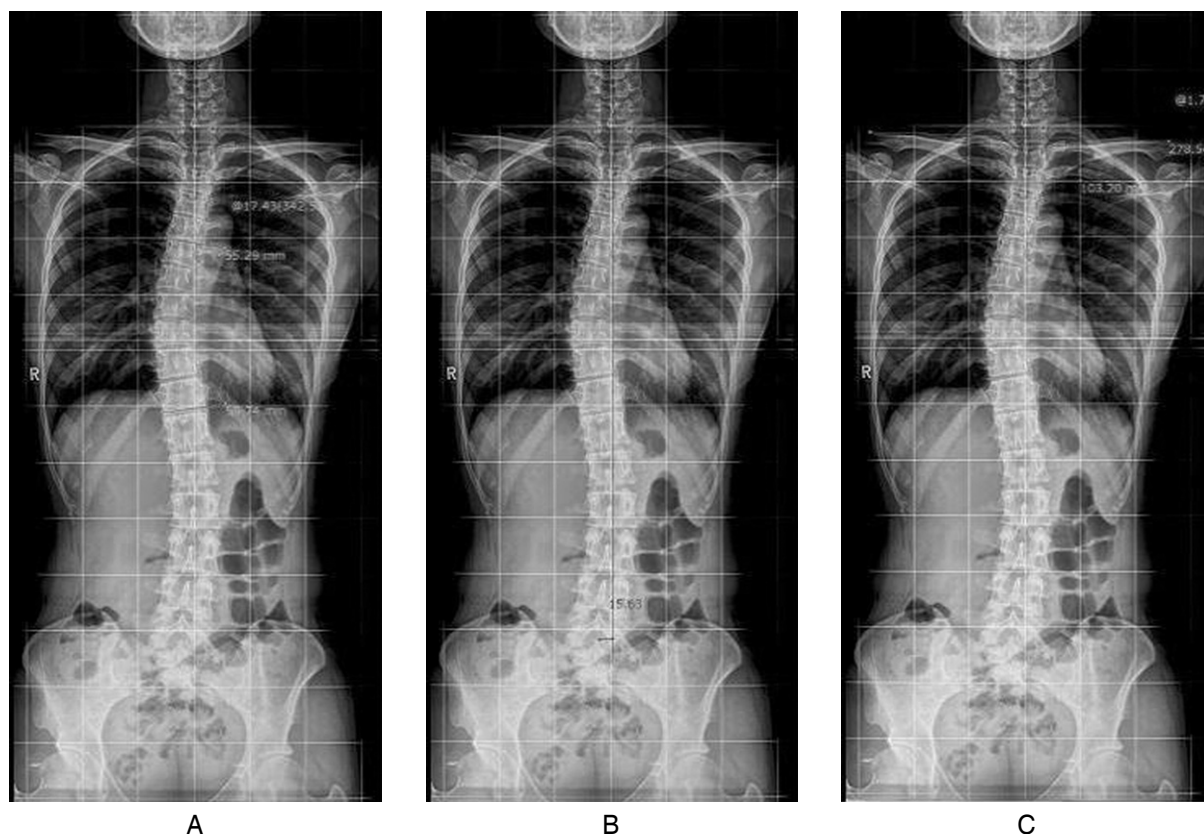


Fig. 2. Whole spine x-ray after treatment. (A) Cobbs angle, 17° , is obtained by measuring the maximal angle from the superior endplate of T6 vertebra to the inferior endplate of the T11 vertebra. (B) Coronal balance, negative 1.6 cm, is measured as distance between C7 plumb line and central sacral vertical line. (C) Clavicle angle, negative 1.8° , is formed by the intersection of a horizontal line and the tangential line connecting the highest two points of each clavicle.

line is dropped vertically from the center of the C7 vertebral body. This usually intersects with the central sacral vertical line. Positive and negative coronal balance are present when this plumb is line is greater than 2 cm to the right and left, respectively⁵⁾.

The restoration of coronal balance reduces several cosmetic deformities including having one shoulder higher than the other. Assessment of the clavicle angle is the most reliable measurements of shoulder asymmetry. The clavicle angle is formed by the intersection of a tangential line connecting the superior aspect of the bilateral distal clavicles to a line parallel to the floor⁷⁾.

According to the theory of Traditional Korean Medicine (TKM), internal disharmony is believed to cause blockage of the body's vital energy, known as qi, which flows along 12 primary and 8 secondary meridians. Blockage of qi is thought to be manifested as tenderness on palpation. The insertion of acupuncture needles at specific points along the meridians is supposed to restore the proper flow of qi⁸⁾. I chose KI3, BL40, BL60, bilaterally. Also, I chose tenderness points on the right thoracic and left lumbar side because the pain region was located along the bladder meridian and the trigger points were nearby. BL60 is commonly used to

treat backache related to the bladder meridian⁶⁾.

Though the mechanism of acupuncture is not completely understood, the ability of acupuncture to influence pain is one of the most widely used indications cited by acupuncture patients⁹⁾. The North American Spine Society recently concluded that acupuncture provides better short-term pain relief and functional improvement than no treatment and that the addition of acupuncture to other treatments provides a greater benefit than other treatments alone⁸⁾. In this case, I believe acupuncture relaxed the stiff muscles and tissues by restoring flow of qi. Then the improved muscle tone may have helped recovery of the curvature and coronal imbalance of the spine.

In this case, I observed that adult idiopathic scoliosis improved under acupuncture treatment. I cannot help stopping the treatment because of patient's personal circumstance. Long-term follow up of this case and properly designed RCTs are required to examine the efficacy of acupuncture in the management of adult idiopathic scoliosis.

IV. Conclusions

Acupuncture was associated with a recovery in the curvature and coronal imbalance of the spine as well as backache. This suggests that acupuncture not only plays an important role in pain control, but can also improve curvature and coronal imbalance of the spine with adult idiopathic scoliosis.

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