

## Clinical Report (Acupuncture)

### *The Effect of Acupuncture and Moxibustion for Ossification of Posterior Longitudinal Ligament and Cervical Spondylotic Myelopathy*

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#### 1. Introduction

Ossification of posterior longitudinal ligament (OPLL) is a progressive disease in which the ossification of the longitudinal ligament located posterior to the vertebra oppresses the spinal cord in the spinal canal and causes such symptoms as swelling and pain that eventually spreads over a larger area.<sup>1)</sup> In this study, patients of OPLL who suffered from intense pain that could not be alleviated with an analgesic and were recommended to undergo surgery, were given acupuncture treatment to relieve the pain. Favorable results were obtained as presented below. Additionally, when acupuncture treatment was similarly provided to two patients of cervical spondylotic myelopathy, the treatment was effective in one patient but non-effective in the other, as also discussed below.

#### 2. Cases

[Case 1] 62-year-old male

[Chief complaint] Intense pain from the posterior region of the neck on the left side to the shoulder area and lateral surface of the arm due to OPLL. Taking an analgesic induced a sleep disorder.

[History of present illness] The patient developed the symptoms in January YYYY. In February YYYY, he was told he has continuous ossification from segments C3 to C4, with the ossification (protrusion) occupying one-third of segment C3 at the most. He was therefore recommended to undergo surgery. The pain was most intense when the patient drove his car, lay down, or walked, such that he took an increasing amount of analgesics.

[Progress of treatment] (First visit) May YYYY. The patient had a fear of needles and requested

acupuncture treatment with minimal stimulation. During treatment in prone position, the pain worsened, so Zhu's scalp acupuncture was applied sitting down, and the pain subsided somewhat. Scalp acupuncture was applied to the front 2/3 of the zone from the top of the right side of the head to the temple, corresponding to the upper left limb, and to the front 1/4 of the area from the temple to the top of the head, corresponding to the head (cerebral/neurological), with the aim of relieving the pain. Additionally, half rice grain size heat transmitting moxa using moxa paper was applied to the area 2cm outside the spinous process of segments C3 to C5 and to the LU-3 point on the left side using moxa paper. After applying the moxa five times, the patient's symptoms disappeared. (Second visit) Four days later. The patient visited the clinic after experiencing intense pain from early morning. Electric acupuncture was applied to the same points as the scalp acupuncture for 10 minutes at 1Hz,  $\phi 0.16\text{mm}$  needles were inserted in the area outside the spinous process of segments C5 and C6 on the left side to a depth of about 2cm and embedded there, and half rice grain size moxa was applied five times to the outside of the spinous process of segments C3 to C7 on the left side and the BL42 point on the left side using moxa paper. As a result, the patient's symptoms of pain disappeared. Thereafter, treatment was applied once a week, and by the seventh visit, the patient recovered to the point where he could carry on with this daily life without any problem, so the frequency of the treatment was reduced to once a month, and he was treated only with embedding needles acupuncture and moxibustion. Scalp acupuncture was rarely applied, thinking that the disappearance of the initial pain might have been attributed to the change in posture from prone position to sitting position. Figure 1 shows the acupuncture points used from the patient's fourth visit and on. In all cases, the needles were inserted to a depth of about 2cm. (15th visit) February YYYY+1. The pain remained gone, and the

patient was able to carry on with his daily life without any problem, but CT images did not show any decline in ossification. (23rd visit) September YYYY+1. The pain returned, but electric acupuncture to the posterior region of the neck dissipated the pain. (39th visit) February YYYY+3. The patient experienced no pain for more than a year, so treatment was canceled. Thereafter, the pain returned in June YYYY+3, however, so treatment was resumed once every one to two months. Figure 2 shows a CT image taken in August YYYY+3. A vertical spreading of the ossification could be seen, but it was not accompanied by pain. The patient continues to receive treatment today.

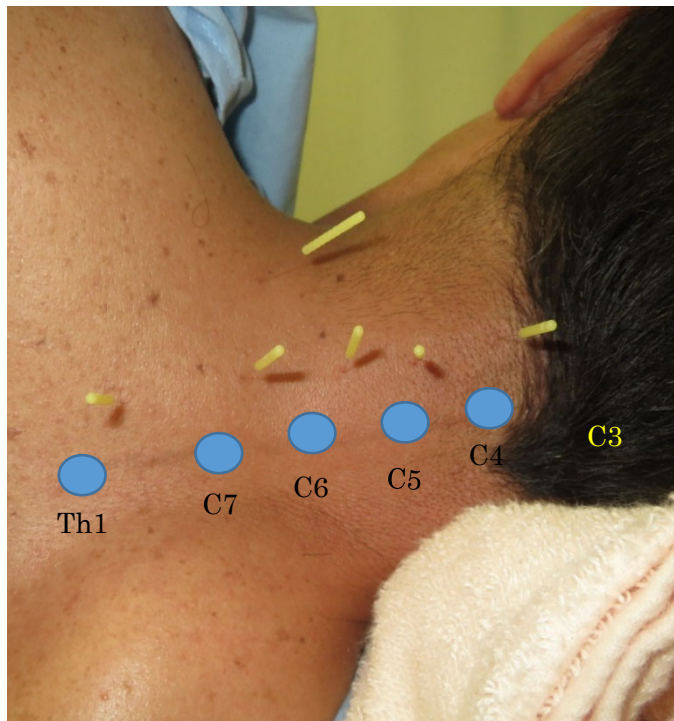


Figure 1 Case 1, acupuncture treatment after 4th visit:  
2cm & 7cm outside the spinous process

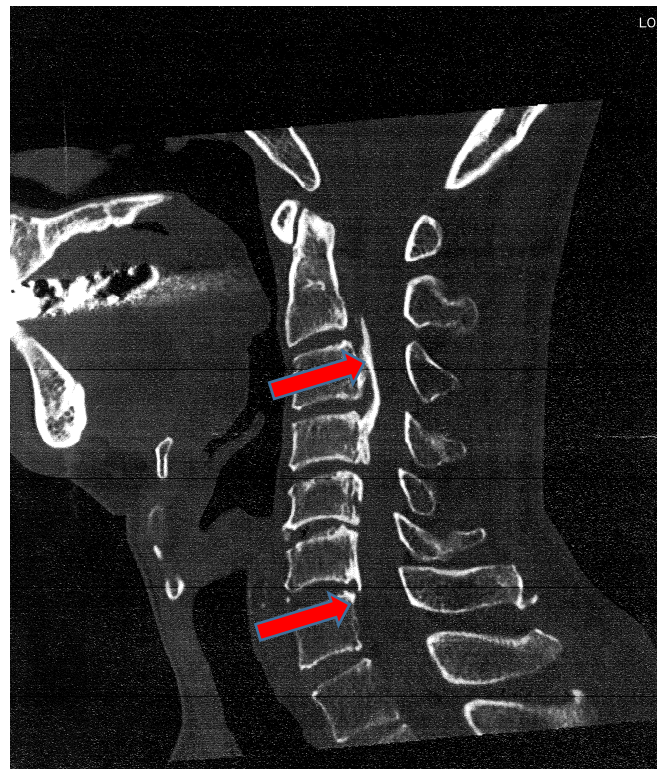


Figure 2 Case 1, CT image:  
Vertical progression of ossification  
39 months after first visit

[Case 2] 57-year-old male

[Chief complaint] Numbness of hands and fingers on the palm side, pain and limited rotation of the neck and shoulders, weak feeling in both legs

[History of present illness] The cervical vertebra had been secured with a bolt, but the patient continued to feel numbness in his hands and fingers, weakness in his legs, an itchiness in his legs, and pain in his lower back. Figure 3 shows a CT image taken on his first visit (after surgery). A disc protrusion was seen. [Progress of treatment] (First visit) June YYYY. Electric acupuncture was applied by inserting needles ( $\phi 0.25\text{mm}$ ) to the area 2cm outside the spinous process from C6 to Th2 on both the left and right sides and to the BL52 and BL25 points to a depth of about 3cm. (3rd visit) To relieve the numbness in the hands and fingers, sleep apnea syndrome, and associated chronic sinusitis, half rice grain size heat transmitting moxa was additionally



applied five times to the area 2cm outside the spinous process of segments C6 to Th2 on both the left and right sides and to the BL43 and SL14 points.

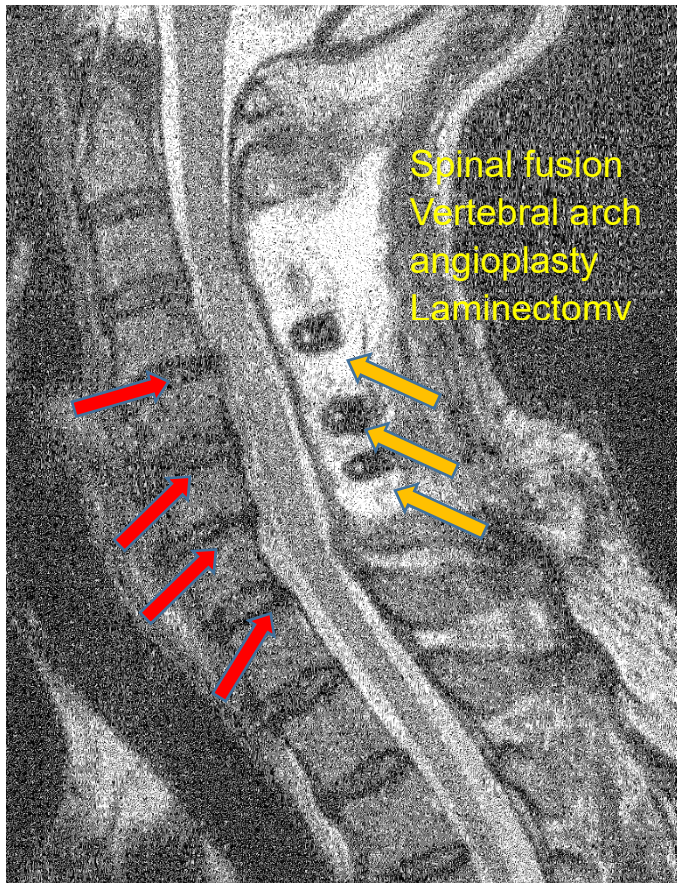


Figure 3 Case 2, post-operative CT image (at the time of first visit)

(12th visit) October YYYY.  $\phi 0.35\text{mm}$  Chinese acupuncture needles were inserted to a depth of about 2cm in an area 2cm outside the spinous process of segments C6 to Th2 on the left and right sides, and in SL11, SL12, LL11, GB12, BL10 and EM13. There was no limitation on the rotation of the neck. Thereafter, the same treatment was continued roughly once a month. Figure 4 shows an X-ray image taken two months after commencing treatment. After the 34th treatment two years and two months after the first treatment, the X-ray image shown in Figure 5 indicated that the alignment of the neck joint was corrected. Around

this time, an improvement was also seen in the movement of the fingers and hands during cold times and the numbness of the fingers and hands on the palm side. Furthermore, the itchiness in both lower limbs and weakness in the legs also disappeared for the most part. (37th visit) October YYYY+2. More than a month without treatment caused tension in the neck and an abnormal noise. Nasal congestion also worsened. The patient thus continues to receive treatment today.

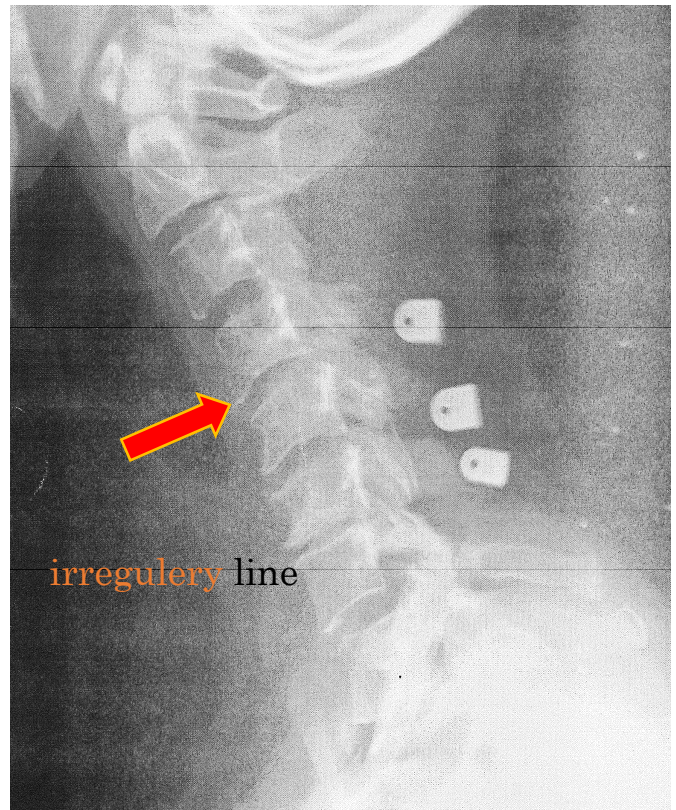


Figure 4 Case 2, X-ray image after two months of treatment:  
Conspicuous misalignment of the vertebral body



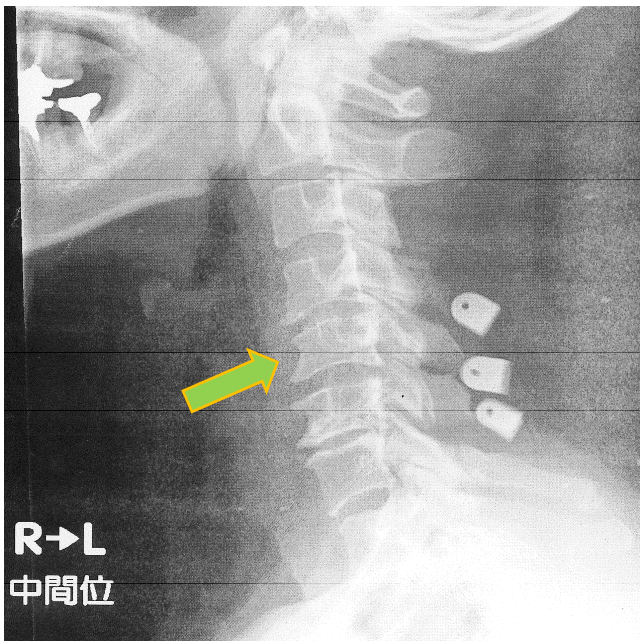


Figure 5 Case 2, 2 months after commencing treatment:  
The vertebral body is aligned

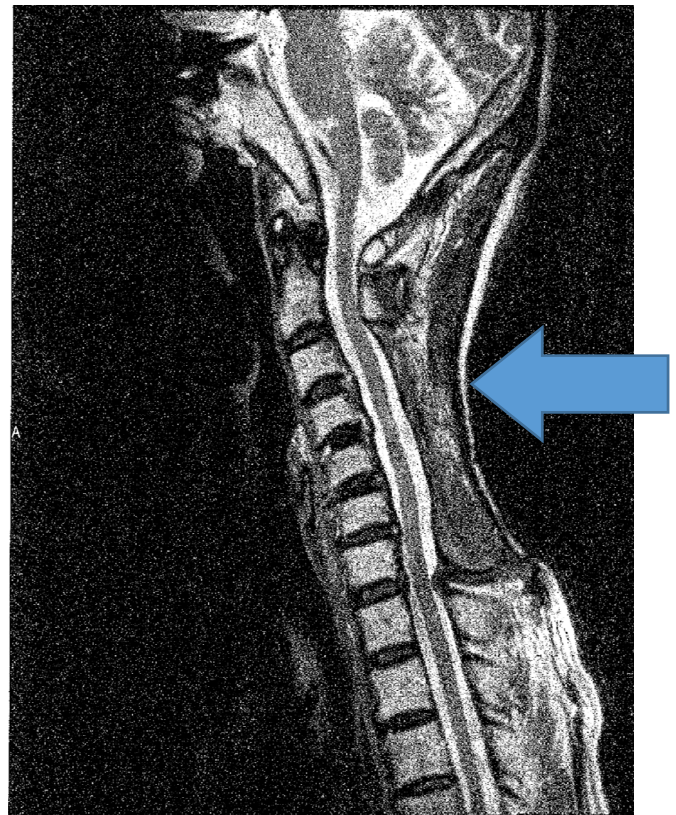


Figure 6 Case 3, CT image after first surgery:  
The muscle is largely gouged

[Case 3] 71-year-old male

[Chief complaint] Heaviness in the neck, numbness in the left hand, walking difficulty after receiving surgery for cervical spondylotic myelopathy

[History of present illness] The patient received surgery to secure the cervical vertebra with a bolt in September YYYY-3 and March YYYY-1. The pain in his neck subsided, but the heaviness remained. He complained of a numbness in his left hand and fingers and walking difficulty accompanying a weakness and instability of his lower body. Because the walking difficult occurred after the surgery, the patient became depressed and could not get himself to go outdoors. No vertebral arch was seen in segments C3 to C6, and the vertebral body from C2 to C6 was fixed. Figure 6 shows a CT image taken after the first surgery (October YYYY-1). Due to the surgery, an area 7cm long and 5cm wide in the neck was gouged and hardened. At the time of his visit to the clinic, the patient's walking appeared to be consistent with the walking speed of people his age, but he said his walking has become much slower than before. He could not lie down in supine position.

[Progress of treatment] (First visit) October YYYY. The patient had no experience in acupuncture treatment. Jakutaku (needle reciprocating) acupuncture was applied to the SI8, PC6 and LI11 points on the left side in a manner that would resonate to the hand and fingers, before embedding them according to the embedding needles method. Additionally,  $\phi 0.16\text{mm}$  needles were inserted to a depth of about 1cm in an area outside the surgical scar on the neck and in an area 2cm outside the spinous process of segments C4 to Th1 on the left and right sides, and the needles were left there for 10 minutes according to the embedding needles. Half rice grain size moxa were also applied ten times to those points using moxa paper. (3rd visit) October YYYY. There were no changes in the patient's symptoms, so Zhu's scalp acupuncture was applied. Needle stimulation was applied to the upper 1/3 and 2/3 of the top of the head toward the temple on both

the left and right sides, and the needles were left there for 15 minutes according to the embedding needles. (5th visit) November YYYY. Electric acupuncture was applied to the upper left limb for 15 minutes at 70Hz. No changes were seen in the patient's symptoms, and the treatment was canceled 8 months later on the patient's 23rd visit.

#### [Result and observations]

In Case 1, ossification of posterior longitudinal ligament (OPLL) was addressed by applying needle stimulation to a depth of approximately 2cm and electric acupuncture was applied several times to an area near the afflicted area, with the result that the pain that was so intense as to keep the patient awake at night disappeared. CT images clearly show a progression of ossification, so careful follow-up is necessary, and there is no telling when the symptoms might worsen. Nevertheless, since acupuncture and moxibustion treatment clearly brought about a remission of the symptoms, there is room to consider the continuation of conservative treatment by acupuncture and moxibustion. Additionally, as it has been confirmed that a recurrence of the pain will occur if acupuncture treatment is suspended, it could be said that acupuncture treatment can prevent pain caused by OPLL. In this case, the patient had a fear of needles, so needle stimulation was applied to an extremely small number of places. In other words, weak stimulation was enough to produce a sufficient effect.

In Case 2, needle stimulation and moxibustion was applied to an area 2cm outside the spinous process of the afflicted part of the cervical vertebra, as in Case 1, but for greater effect,  $\phi 0.35\text{mm}$  Chinese needles that are twice the thickness of those used in Case 1 were used, and heat transmitting moxa was applied without using moxa cautery or moxa paper. As the patient's symptoms were in his four limbs, acupuncture and moxibustion were applied to both his left and right sides. The same acupuncture points were used, but with greater stimulation. In this

patient, an improvement was seen in his symptoms and in the alignment of his neck after two years of treatment. It is thus thought that the amount of stimulation influences the amount of time until an improvement is seen in the symptoms.

Next is an observation on moxibustion. In this study, moxibustion was applied in all three cases. In Cases 1 and 3, heat transmitting moxa was applied using moxa paper, and in Case 2, heat transmitting moxa was applied without using moxa paper. Heat transmitting moxa is becoming rather outdated in Japan. It is rarely applied or hardly known in China today. I have used heat transmitting moxa to treat allergies, colds, sleep apnea syndrome and hemiplegia, with results that indicate its efficacy.<sup>3) 4) 5)</sup> Therefore, it was also used in the three cases of this study, but because acupuncture and moxibustion were applied at the same time, it cannot be said that moxibustion was effective judging from these three cases alone. In Case 1, the patient was nervous and was prone to feel intense pain because he had a fear of needles, so there were times when it was impossible to insert any needles and only acupuncture was applied. As he is still undergoing treatment, I would like to attempt treatment solely by acupuncture hereafter.

Lastly, with regard to Zhu's scalp acupuncture, I have felt its efficacy against the aftereffects of a stroke and also against general pain.<sup>3)</sup> I therefore performed scalp acupuncture in Cases 1 and 3, but when considering that in Case 1 the pain may have disappeared owing to a change in body position, it was performed only five times among a total of 46 treatment sessions. Furthermore, in Case 2, certain effects were produced without applying scalp acupuncture, and in Case 3, scalp acupuncture was applied nine times out of a total 23 treatment sessions, but no changes in symptoms were observed. Thus, the efficacy of Zhu's scalp acupuncture is not known in these three cases.

## [Conclusion]

Applying acupuncture and moxibustion treatment to the area afflicted with ossification of posterior longitudinal ligament (OPLL) brought an improvement in the symptoms thereof, and suspending the treatment brought a recurrence of the symptoms. This suggested that applying acupuncture and moxibustion to the afflicted area may have some form of impact on the spinal canal.

The efficacy of the same acupuncture and moxibustion treatment against the postoperative aftereffects of cervical spondylosis myelopathy was also suggested. It is thought that with respect to patients who have a cervical problem, acupuncture and moxibustion treatment to the afflicted area has the effect of correcting the cervical alignment and improving the symptoms, but in cases where a significant decrease in muscle has occurred in the afflicted part, acupuncture and moxibustion does not have the effect of correcting the alignment.

Based on the above, it could be said that it is beneficial to recommend acupuncture and moxibustion treatment before surgery as long as time allows.

## [References]

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(The above references 1 to 6 are all in Japanese only)