

## Moxibustion Treatment of Breech Presentation

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**Abstract:** Breech presentation was successfully corrected by stimulating acupuncture points with moxibustion or low-frequency electrical current. Only patients with breech pregnancies at the 28th week or later were entered into the study. With moxibustion treatment, the control group had a spontaneous correction rate of 165/224 (73.66%), and the treatment group had a correction rate of 123/133 (92.48%) ( $P < 0.0001$ ,  $\chi^2$  test). With low-frequency percutaneous electrical stimulation, the correction rate was 20/94 (21.28%) in the control group and 171/191 (89.52%) in the treatment group ( $P = 0.094$ ,  $\chi^2$  test). The controls in the moxibustion study did no exercises and received no external manipulation to correct breech presentation whereas those in the electrical stimulation study experienced both. Acupuncture stimulation, especially with moxibustion, is expected to serve as a safe and effective modality in the management of breech presentation in a clinical setting.

It is widely known that neonatal mortality and the incidence of neonatal asphyxia are higher in vaginal breech delivery than in cephalic delivery. Thus, cesarean section is often selected to deliver a breech (Cardini *et al.*, 1991). However, because cesarean section is not perfectly safe (Cardini *et al.*, 1991; Collea, 1980; Confino *et al.*, 1985; Gimovsky *et al.*, 1983), it is better to reposition a breech fetus to a cephalic position for normal vaginal delivery, if version can be performed safely (Kaneko, 1993; Kenneth *et al.*, 1976; Kimura, 1973). Although breech fetuses often reposition spontaneously to a cephalic position up to the 30th to 32nd week of pregnancy, spontaneous cephalic version rarely occurs after this period of pregnancy. Traditionally, knee-chest exercises are done to aid spontaneous cephalic version. However, this technique cannot produce a high success rate. External version, which is a method of rotating a fetus positioned in a breech presentation using external force, may cause premature placental abruption or neonatal asphyxia (Kinoshita *et al.*, 1974; Levinson *et al.*, 1987), resulting in its infrequent use in recent years. These circumstances led us to investigate the correction of breech presentation by stimulation of acupuncture points, which is a technique that has been employed in China since ancient times (Lyons *et al.*, 1978;

Prichard *et al.*, 1985; Sakamoto *et al.*, 1992; Saling *et al.*, 1975), and we carried out the present studies to determine whether acupoint stimulation is a safe and effective method of correcting breech presentation.

## Methods

### 1) Moxibustion Treatment (study period: September 1992 to December 1996)

One hundred thirty-three pregnant women whose fetuses were determined to be in a breech presentation at the 28th week of pregnancy or later and who gave their consent to moxibustion treatment were entered to this study. Expected dates of their deliveries were between January 1993 and December 1996, during which period 1437 infants were delivered at our institute. The subjects consisted of 61 primigravidas and 72 multigravidas, with the mean age of 28.4 years.

A total of 1478 women with simple labor between January 1989 and December 1992 were used as controls, none of whom received moxibustion treatment because we had not yet initiated this treatment. Of these controls, 224 showed breech presentation after the 28th week of pregnancy.

Moxibustion treatment was given daily for 30 minutes until the breech presentation was corrected or confirmed to no longer have any effective response to moxibustion. In moxibustion treatment, 6 acupuncture points, including SP-6 (San-Yin-Chiao), BI-67 (Chih-Yin), and Ki-1 (Yung-Ch'üan) on both right and left sides, were used (Figure 1). Moxa sticks were used for BI-67; Sennen-kyu was used for SP-6 (10 pieces were used on right and left sides); and Kamaya-kyu was used for Ki-1 (10 pieces on right and left sides). Sennen-kyu is a piece of Moxa packed into a tube with a plinth, made of Japanese paper.

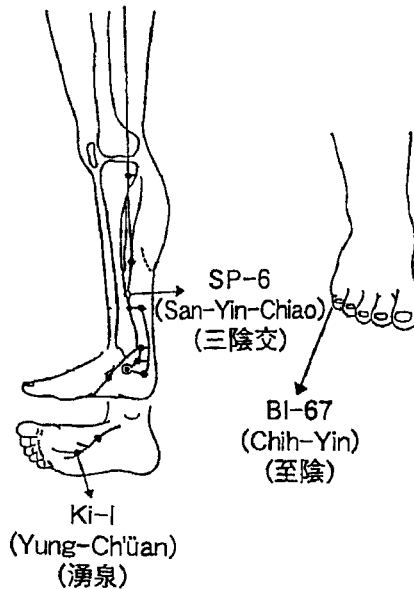


Figure 1. Location of acupuncture points used in this study.

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Kamaya-kyu is developed to abate heat from burning Moxa by making a space between the Moxa and the skin.

The acupuncture point Bl-67 was selected because this point, located on the foot along the Yan bladder meridian, has been used for correction of abnormal fetal presentation, and it is said that moxibustion on this point alone is effective in presentation correction. In fact, one of the authors encountered a successful case of cephalic version, in which he instructed a husband to massage this point for his wife with breech presentation. This experience motivated the author to conduct the present studies.

SP-6 is an intersection of 3 Yin meridians for the spleen, kidney and liver on the foot. This point is important for female diseases. Like Bl-67, SP-6 is also used for correction of abnormal fetal presentation.

Ki-1, a point on the foot kidney meridian, was selected because stimulation of this point increases vital energy and also strengthens uterine function. This point is also known to facilitate calmness (Tashiro *et al.*, 1990; Takagi *et al.*, 1980).

Ultrasound examination was performed before and after each moxibustion treatment to determine the fetal presentation. Treatment was discontinued when the fetus was found to be repositioned to cephalic presentation.

### *2) Low-Frequency Percutaneous Stimulation*

The same acupuncture points as those used for moxibustion treatment were stimulated with low frequency (at 3 Hz) for 30 minutes at each time of treatment using ECG electrodes. Of 941 women with simple labor, treated at affiliated hospitals between April 1994 and July 1995, 191 with breech presentation after the 28th week of pregnancy received low-frequency stimulation. As controls, 1038 women with simple labor between April 1992 and March 1994 were examined. Of these controls, 217 showed breech presentation after the 28th week of pregnancy.

## **Results and Discussion**

### *1) Moxibustion Treatment*

Of the 133 women receiving moxibustion treatment, 123 (92.48%) underwent cephalic version. In the control group of 224 women, 165 (73.66%) underwent cephalic version. This difference in correction rate is highly significant ( $p < 0.0001$ ,  $\chi^2$  test). There were no differences in age, gestational age, ratio of primiparae to pluriparae, body weight, or height between the treatment and control groups (Table 1).

### *2) Low-Frequency Percutaneous Stimulation*

Of the 217 women in the control group, 182 (83.87%) underwent cephalic version. Of the 191 women receiving acupuncture stimulation, 171 (89.52%) underwent cephalic version. This difference had a one-tailed significance of 0.094, almost reaching the 5% level. The reasons for the higher correction rate in this control group, compared with that seen for the moxibustion control group, are that women with breech presentation in the current control group were warmly encouraged to do knee-chest exercises during the period of the study of low-frequency stimulation, and their obstetricians specialized in external version correction

**Table 1. Correction Rate for Breech Presentation with or without Moxibustion Treatment**

Moxibustion treatment			
	Control group	Treated group	Significance
The rate of breech delivery	59/1478 (3.99%)	36/1437 *2.51%)	p = 0.0238 ( $\chi^2$ test)
Correcting rate	165/224 (73.66%)	123/133 (92.48%)	p < 0.0001 ( $\chi^2$ test)

**Table 2. Correction Rate for Breech Presentation with or without Acupuncture Treatment**

Low-frequency percutaneous stimulation			
	Control group	Treated group	Significance
The rate of breech delivery	35/1038 (3.37%)	20/941 (2.13%)	p = 0.092 ( $\chi^2$ test)
Correcting rate	182/217 (83.87%)	171/191 (89.52%)	p = 0.094 ( $\chi^2$ test)

of breech presentation. There were no differences in age, gestational age, ratio of primiparae to pluriparae, body weight, or height in the treatment and control groups.

The results of the present study suggest that stimulation of acupuncture points can increase the rate of cephalic version in breech pregnancies to around 90%, even after the 28th week (Tatum *et al.*, 1985). Although stimulation of acupuncture points is known to be effective for many diseases, the mechanisms of correction of fetal presentation with acupoint stimulation remain obscure. Correction of fetal position with knee-chest exercises or external version is usually made while the uterus is being relaxed, because a tense uterus usually results in a low success rate and involves a high risk of complications. It was confirmed that stimulation of acupuncture points relaxed the myometrium, providing the fetus with a more movable condition. However, it should be further determined what mechanism is involved in the initiation of fetal movements. When the effects of acupoint stimulation on uterine muscular tonus were examined using a monitoring system in patients at the risk of premature birth, we observed the disappearance of uterine contraction, as shown in Figure 2. Moreover, the uterine artery and umbilical artery showed a temporary decrease in pulsatility index (PI) after acupoint stimulation, improving the fetal environment (Figure 3 and Figure 4). These changes seem to activate fetal movements, possibly causing cephalic version. When abdominal temperature was measured with a thermograph before and after acupoint stimulation, skin surface temperature was found to be increased by stimulation, indicating vascular dilatation and increased blood flow. Patients reported in our questionnaire research that they had no abdominal pain during moxibustion treatment, but rather felt

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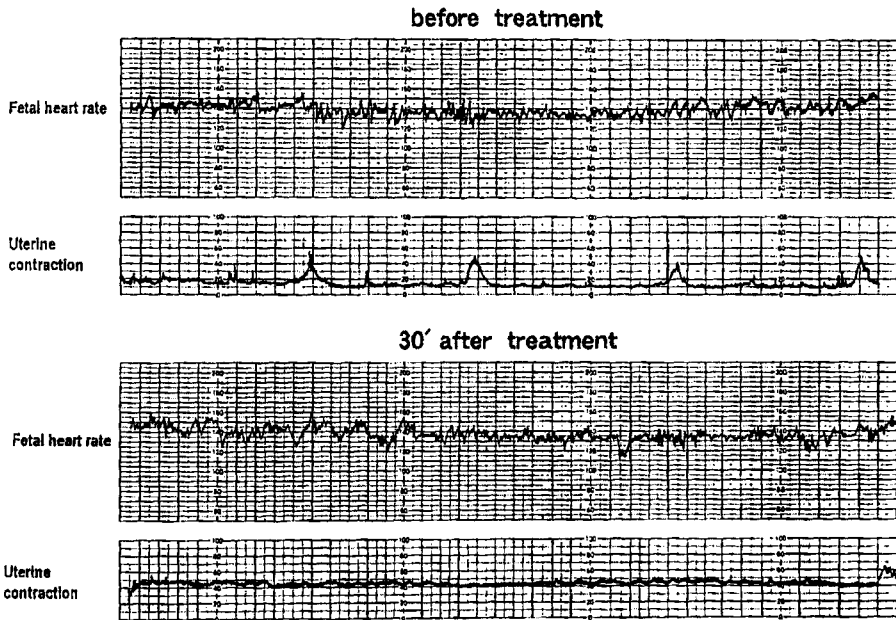


Figure 2. Effect of acupuncture on fetal heart rate and uterine contraction.

comfortable warmth not limited to the abdomen, but in the entire body. They also reported a decrease in uterine tonus and an increase in fetal movements (Figure 5). Their blood pressure and pulse rate remained stable during acupoint stimulation (Figure 6). Thus we confirmed that stimulation of acupoint points is a safe therapeutic modality, without inducing anxiety or any unpleasant feeling.

Although the precise mechanisms involving the correction of fetal presentation with acupoint stimulation still remain obscure, the results of our present studies seem to explain at least a portion of the mechanisms. A reason for a higher percent of women with breech presentation at our institute is thought to be that the larger number of cases with more difficulty in treatment, such as those complicated with myoma, are treated at our institute, compared with affiliated hospitals, because such cases are often referred to our university hospital from other hospitals, including infertility clinics. The discrepancy in the number of women with breech presentation between the 2 control groups examined in the present studies is thought to result from the fact that patients were often encouraged to do knee-chest exercises at the affiliated hospitals where external version was also performed, whereas no particular measures had been taken to correct abnormal fetal presentations at our university hospital. A reason for a higher correction rate obtained by moxibustion treatment, compared with low-frequency stimulation, is thought to be that every moxibustion treatment was performed directly by a specialized technician, while a co-medical technician simply applied electrodes to acupoint points for a prescribed duration of time in low-frequency stimulation.

Because stimulation of acupoint points showed potential in the treatment of imminent premature birth during the present studies, the author attempted to stimulate acupunc-

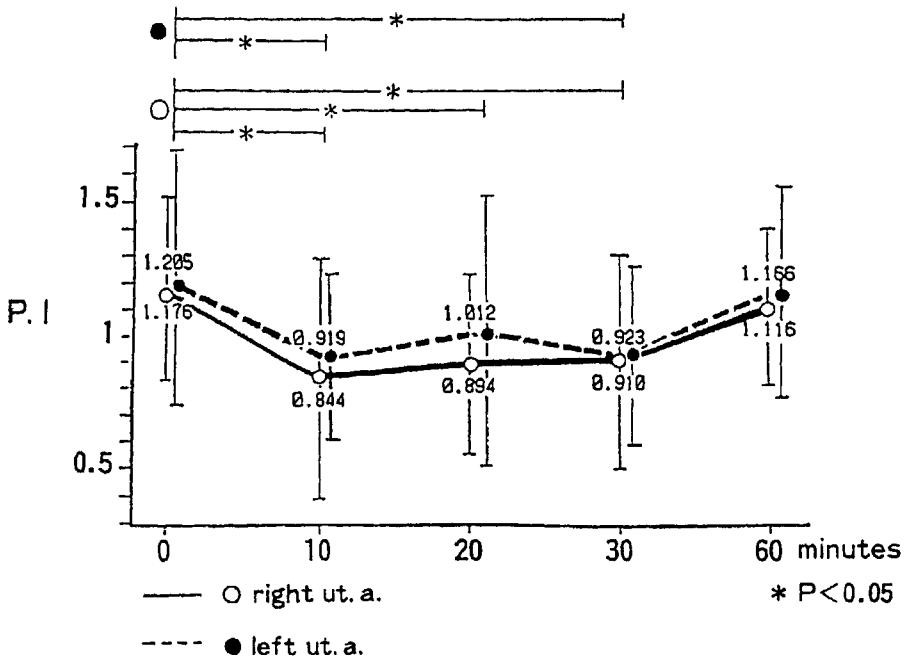


Figure 3. Pulsatility Index (PI) of uterine artery.

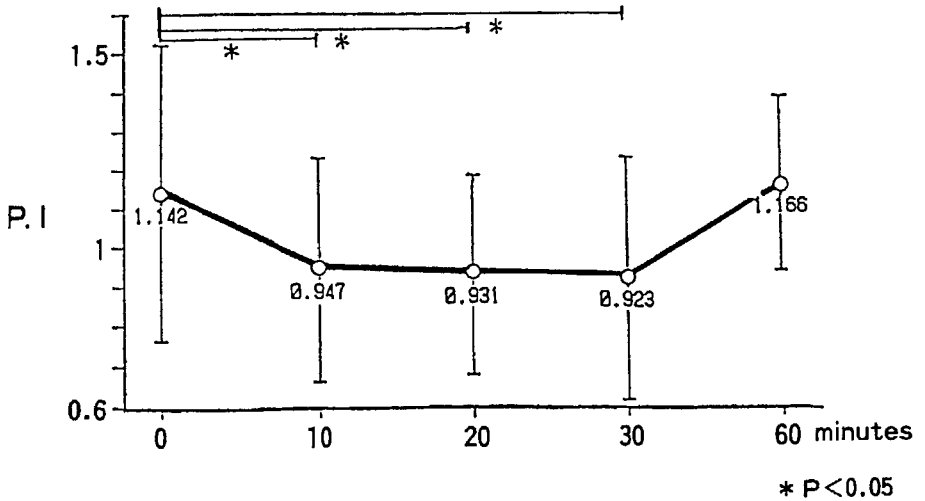


Figure 4. Pulsatility Index (PI) of umbilical artery.

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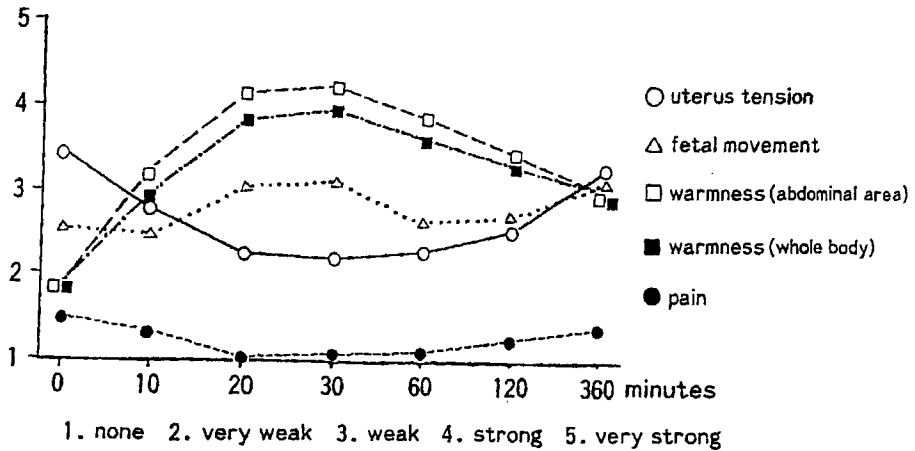


Figure 5. Survey of patients during moxibustion treatment.

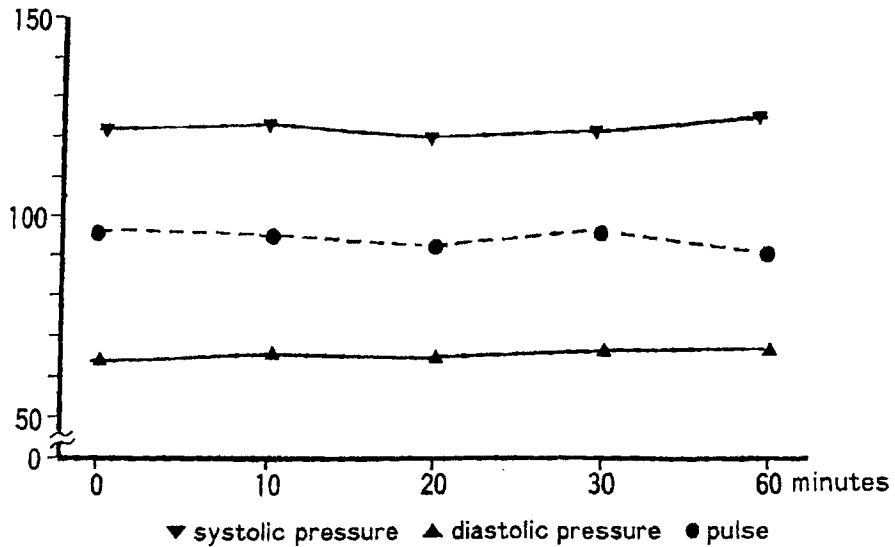


Figure 6. Blood pressure and pulse during acupuncture treatment.

ture points in women with imminent premature birth. The results revealed a clear decrease in imminent premature birth score (Figure 7) and a decreased number of patients hospitalized for imminent premature birth, in addition to a marked decrease in the clinical use of ritodrine hydrochloride, which has been used to treat premature birth at our institute (Figure 8), possibly contributing to a reduction of medical cost.

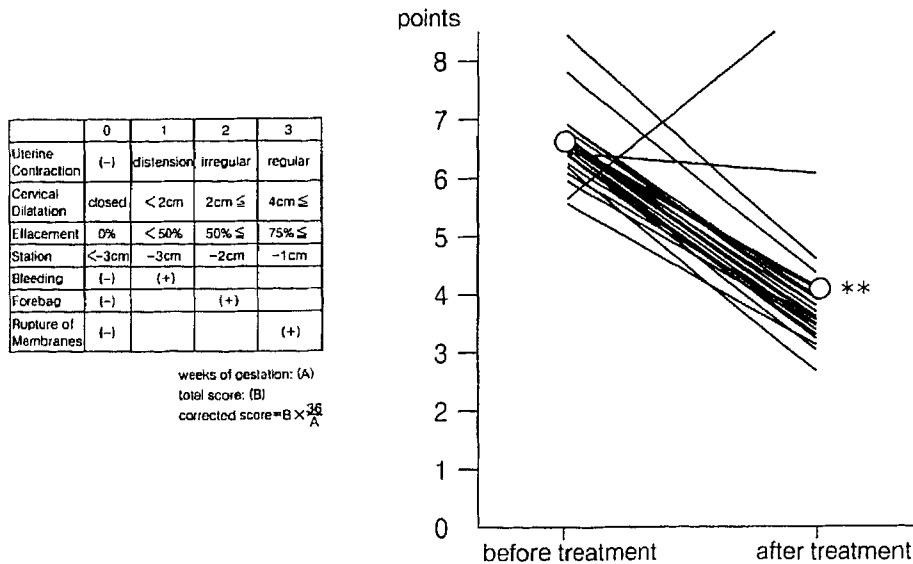


Figure 7. Imminent premature birth score.

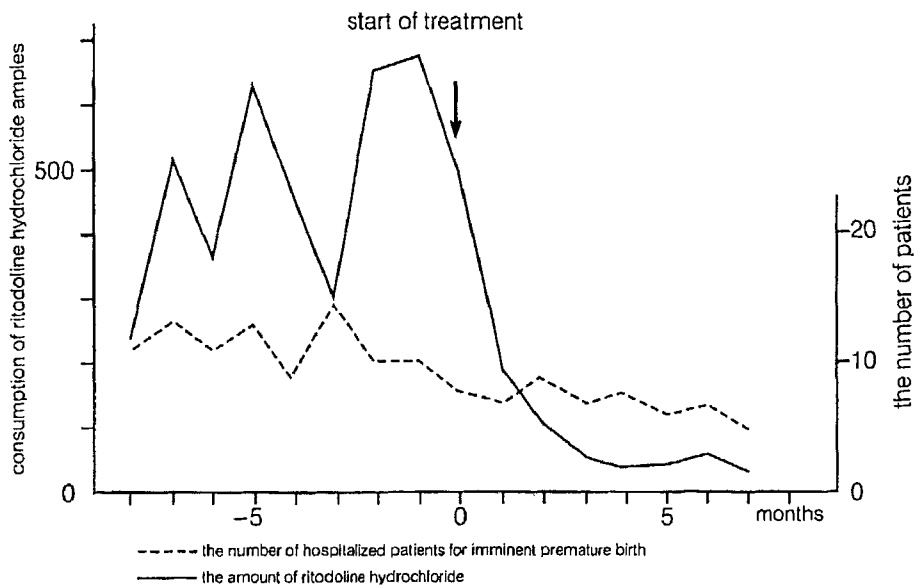


Figure 8. Effect of treatment on ritodoline hydrochloride consumption per days of hospital stay.

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In conclusion, it was confirmed that stimulation of acupuncture points used in Eastern medicine is very effective in correcting breech presentation. During the present studies, this therapeutic modality was also found to be effective in treating imminent premature birth. We conclude that introduction of Eastern medicine to current clinical practice, in which Western medicine has taken a main stream, improves therapeutic efficacy without increasing risks and provides more economical treatment.

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