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Effectiveness of Acupuncture and Moxibustion Treatment for Lymphedema Following Intrapelvic Lymph Node Dissection: A Preliminary Report

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Abstract: Although it is difficult in Western medicine to eliminate edema occurring in the lower extremities after intrapelvic lymph node dissection for malignant gynecologic tumors, we successfully treated or prevented this postoperative complication with moxibustion and acupuncture, initiated after the occurrence of lymphedema in 12 patients and as soon as possible after surgery in 12 others. An increase in deep body temperature with acupuncture or moxibustion was found to be essential for successful treatment.

Keywords: Lymphedema; Deep Body Temperature; Acupuncture and Moxibustion Treatments; Gynecologic Malignant Tumor; Lymph Node Dissection.

Introduction

Intrapelvic lymph nodes are usually dissected at the time of radical operation for carcinoma of the uterine cervix, carcinoma of the uterine body, or for ovarian cancer. This all too often results in lymphedema of the lower extremities. Some such patients complain of pain or gait disturbances due to severe edema. However, such edema cannot be controlled sufficiently by current Western medicine. Most cases merely get rest and lifting of the affected lower extremities until spontaneous recovery, while only a diuretic is given as drug therapy, if necessary. Currently, we have actively introduced Oriental medicine for the treatment of a wide range of diseases using Chinese medicines and acupuncture/moxibustion. Acupuncture and moxibustion treatments were found to be particularly useful for the correction of breech presentation, with a 96% or higher correction rate, leading to a decrease in the rate of cesarean sections (Niwa *et al*., 1994). Thus, we applied this therapeutic modality of Oriental medicine to the treatment of lymphedema, and we evaluated its usefulness.

Patients and Methods

Patients undergoing intrapelvic lymph node dissection for carcinoma of the uterine cervix, carcinoma of the uterine body, or for ovarian cancer at our university hospital after November 1996 were entered into the present study. They ranged in age from 37 to 71, including 13 with carcinoma of uterine cervix, ten with carcinoma of uterine body, and one with ovarian cancer. Patients receiving radiation therapy were excluded. Acupuncture and moxibustion treatments were initiated after the occurrence of lymphedema in 12 patients and immediately after surgery in 12 other patients.

There have been no reports on acupuncture and moxibustion treatments for lymphedema. Thus we chose the following acupuncture points for the treatment of lymphedema: St-36 (Tsu-San-Li, Walking Three Miles), Sp-6 (San-Yin-Chiao, Crossroad of Three Yins), Bl-23 (Shen-Shu, Kidney Locus), Bl-67 (Chih-Yin, Extreme Yin), Ki-1 (Yung-Ch'uan, Pouring Spring), Co-2 (Ch'u-Ku, Crooked Bone), Co-3 (Chung-Chi, Middle Extreme), and Co-12 (Chung-Wan, Middle Epigastrium). Moxa sticks were used for B1-67, and Kyuto-shin for other points. Kyuto-shin is a therapeutic method to which principles of both moxibustion and acupuncture are applied. This method potentiates the effects of both moxibustion and acupuncture by placing and burning moxa on the needle head. It is also beneficial to the patients because no moxibustion scar is left. Treatment was performed for 15–20 minutes at each time, five times/week during hospitalization and twice/week at the outpatient clinic. Lymphedema was evaluated by measuring the circumference of the leg at the designated level. Lymph cysts were ultrasonographically observed. Changes in deep body temperature by moxibustion were measured using a core Temp CTM-205 (Terumo Corp.) (Matsukawa *et al*., 1996; Fox *et al*., 1973), while the sensor was placed on the tip of the middle finger. To briefly describe the mechanism of measurement with this device, although body surface temperature is usually lower than deep body temperature because of the influence of outside air temperature, the body surface temperature is known to become equal to the deep body temperature if the body surface is covered with an insulating material to prevent the influence of outside air temperature. Thus, a CTM-205 device can monitor deep body temperature by applying this principle to measurement.

Results

Group of 12 Patients Receiving Moxibustion and Acupuncture Treatments After the Occurrence of Lymphedema (*Table 1*)

Cases 3, 6–9, 11 and 12 had relatively mild edema. Their edema disappeared subjectively and objectively by two months after the start of treatment, and the treatment could be terminated.

Cases 1, 2, 4, 5, 8 and 10 showed marked improvement. Case 2 described a patient who had surgery more than four years previously and showed no response to any Western medicine. Their lower extremities were entirely hardened, swollen, and reddened and they sometimes had difficulty in walking. Hardened and swollen lower extremities became gradually softened in all patients at two to three weeks after the start of treatment, and

edema began to disappear at the same time. However, a subjectively and objectively satisfactory recovery required four months or more in all patients. Of these patients, Case 4 is shown in Figs. 1 and 2, which clearly demonstrates the disappearance of the edema.

Case 1 was unique among the markedly improved cases. This patient was complicated not only with lymphedema of the lower extremities, but also with lymph cysts in the inguinal region and pelvis. Although her established large cysts could not be cured by acupuncture

Table 1. Group of 12 Patients Receiving Moxibustion and Acupuncture Treatments After the Occurrence of Lymphodema

Case	Age	Name of Disease	Date of Surgery	No. of Days Until the Start of Postoperative Treatment	Efficacy
R.N	66	Carcinoma of uterine body	1996/7/8	128	Marked improvement
C.T	62	Carcinoma of uterine body	1992/10/13	1555	Marked improvement
T.N	45	Carcinoma of uterine cervix	1991/11/15	1891	Improvement
S.K	40	Carcinoma of uterine cervix	1997/2/22	10	Marked improvement
H.Y	71	Carcinoma of uterine cervix	1997/1/30	40	Marked improvement
H.S	52	Carcinoma of uterine cervix	1997/4/17	8	Improvement
K.I	55	Carcinoma of uterine body	1996/6/18	355	Improvement
H.T	59	Carcinoma of uterine body	1997/2/25	144	Marked improvement
M.H	53	Carcinoma of uterine cervix	1994/1/20	1321	Improvement
S.T	69	Carcinoma of uterine cervix	1997/9/18	12	Marked improvement
K.Y	58	Carcinoma of uterine cervix	1998/8/18	18	Improvement
K.M	55	Ovarian cancer	1997/11/11	7	Improvement

Table 2. Group of 12 Patients Receiving Moxibustion and Acupuncture Treatments Immediately After Surgery

Case	Age	Name of Disease	Date of Surgery	Date of the Start of Treatment	Efficacy
K.Y	57	Carcinoma of uterine body	1998/1/9	1998/1/22	Effective
E.K	55	Carcinoma of uterine body	1998/2/5	1998/2/17	Effective
J.I	51	Carcinoma of uterine body	1998/6/2	1998/6/8	Effective
K.T	40	Carcinoma of uterine cervix	1998/8/27	1998/9/7	Effective
R.K	40	Carcinoma of uterine cervix	1998/9/17	1998/9/24	Effective
K.I	37	Carcinoma of uterine cervix	1999/6/24	1998/7/8	Effective
I.A	53	Carcinoma of uterine cervix	1999/1/14	1999/2/2	Effective
M.H	49	Carcinoma of uterine body	1999/2/4	1999/2/23	Effective
T.K	37	Carcinoma of uterine body	1999/7/27	1999/8/13	Effective
K.F	49	Carcinoma of uterine cervix	1999/8/3	1999/8/13	Effective
S.H	62	Carcinoma of uterine cervix	1999/8/24	1999/9/28	Effective
M.M	46	Carcinoma of uterine body	1999/8/19	1999/11/11	Effective

and moxibustion alone, lymphedema and lymph cysts could be eliminated during a period of more than one year, in which punctures and aspirations were repeatedly performed, in addition to persevering acupuncture and moxibustion treatments. No evidence of recurrence has been observed since then and moxibustion treatments. No evidence of recurrence has been observed for more than one year since the last treatment.

Group of 12 Patients In Whom Moxibustion/Acupuncture Was Initiated As Soon As Possible After Surgery (*Table 2*)

We began to actively conduct moxibustion and acupuncture treatments on patients of group II soon after surgery since the therapeutic effect was confirmed in group I. The incidence of

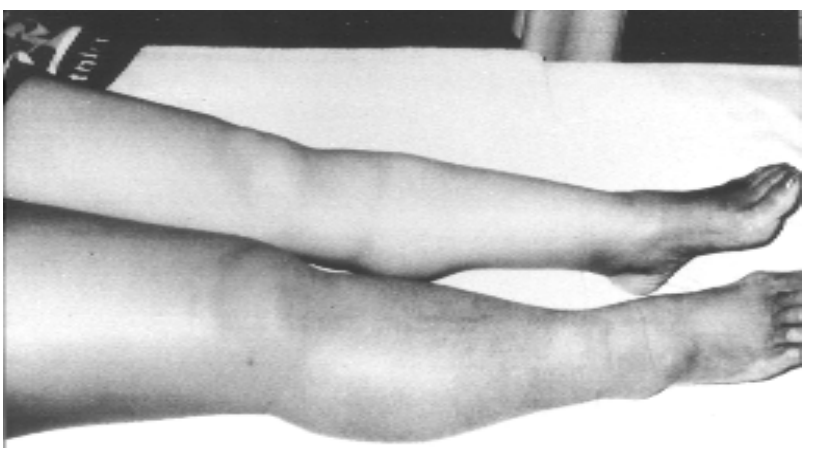

Figure 1. Pre-treatment: Edema of the right leg was remarkable.

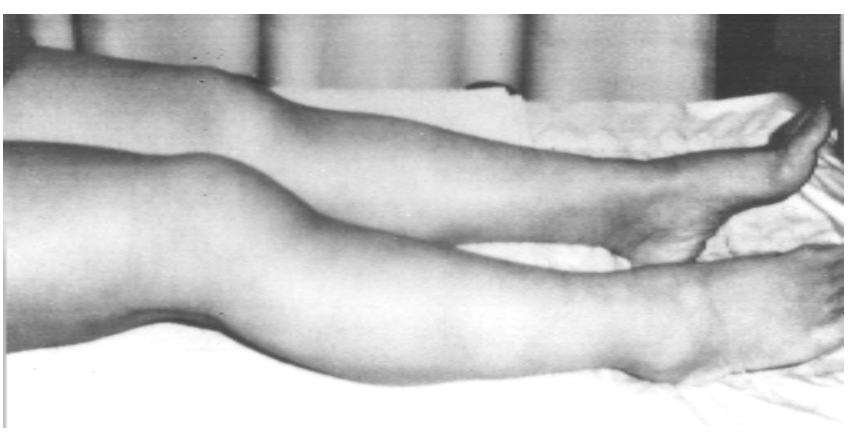

Figure 2. Post-treatment: The edema disappeared.

postoperative lymph cyst/lymphedema was 28.8% (24/84 cases) during the past ten years, in which acupuncture or moxibustion treatment had not been performed at our university hospital. The incidence of these postoperative complications has been reported to range from approximately 40% (Kagan *et al.*, 1976) to 80.4% (Lee *et al.*, 1976). Although we have performed acupuncture and moxibustion treatments at the present time since surgery, none of the 12 patients have developed edema, proving the preventive effect of acupuncture and moxibustion treatments. Although the number of cases undergoing these treatments is small, no lymphedema has been observed since we actually introduced acupuncture and moxibustion following surgery. After these cases, the same results have been obtained, and new cases have been accumulated. Since this study, moxibustion or acupuncture is initiated as soon as possible after surgery in all patients receiving intrapelvic lymph node dissection, and we have seen no occurrence of lymph edema.

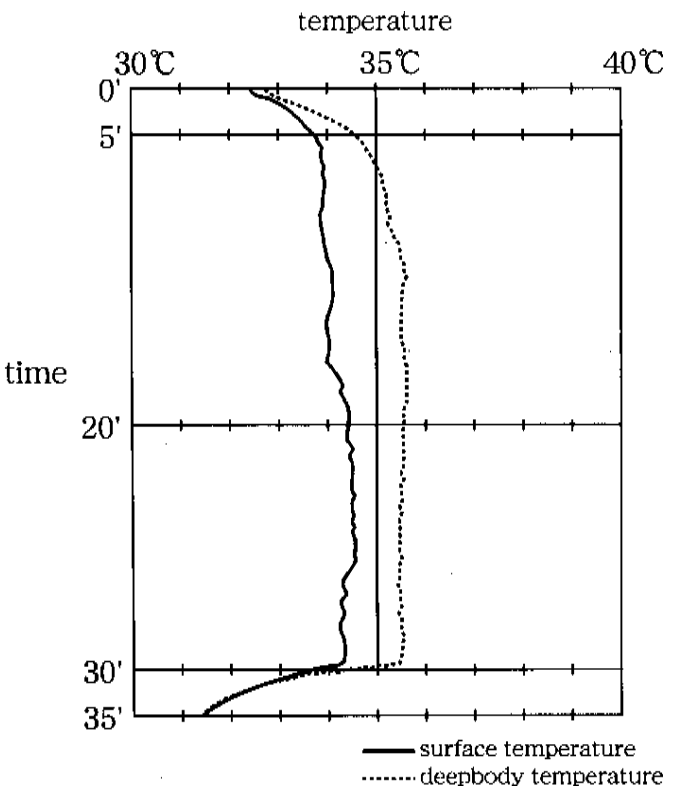

Figure 3. Deep body temperature definitely more increased, compared with body surface temperature.

Changes in Deep Body Temperature with Acupuncture or Moxibustion

Measurements of finger tip surface temperature and deep body temperature are shown in Fig. 3. Body temperature was clearly elevated after the start of treatment. Deep body temperature was found to increase more, compared with body surface temperature. It was also found that deep body temperature increased faster and to a higher level in the cases with higher therapeutic efficacy of acupuncture and moxibustion treatments. It was clear that moxibustion as well as acupuncture more remarkably elevated deep body temperature, compared with surface temperature, revealing more improvement in deep circulatory dynamics than in surface circulatory dynamics. This indicates that lymph flow can be improved by moxibustion or acupuncture. Peripheral regions, where coldness appears predominantly, are suitable for the observation of coldness. Thus temperature was measured at the tip of the hand (middle finger), because fingers are less deformed, and they have a smooth skin, compared with toes. This resulted in low temperature. The device used to measure temperature was a Core Temp CTM-205 (Termo Corp.).

Discussion

From these results, it was confirmed that acupuncture and moxibustion treatments have therapeutic and preventive effects on lymphedema. Although the mechanisms of these treatments has been gradually clarified using techniques of Western medicine, most of them have still remain obscure because treatments in Oriental medicine, including acupuncture and moxibustion, have been done empirically.

Intrapelvic lymph node dissection is an excellent surgical and therapeutic modality developed in the 20th century. Needless to say, acupuncture points used to improve lymphedema have not been described in the literature. Thus we selected acupuncture points by ourselves, as mentioned below. San-Yin-Chiao, a locus of the foot yin maximum spleen meridian, is widely used for the treatment of gynecologic diseases because it is considered to enhance the function of the spleen and to facilitate blood circulation. Shen-Shu and Chih-Yin, loci of the yang maximum urinary bladder meridian, and Yung-Ch'uan, a locus of the foot yin minimum kidney meridian, are considered to regulate water and urine. Tsu-San-Li is a basic point for the whole body, used to treat over-sensitiveness to cold, dizziness and anemia. This point was selected because it regulates a well-balanced condition of the whole body. Because of stimulation of the lower extremities, Tsu-San-Li was also thought to be effective for the treatment of circulatory disturbance in the lower body. Ch'u-Ku, Chung-Chi, Chung-Wan, loci of the conception meridian, were selected because they are related to the regulation of the systemic meridian vessels. Therefore, we expected that the lymph flow would improve, leading to the remission of lymphedema and lymph cysts. However, the mechanisms of action still remain obscure because it is difficult to measure lymph flow.

An increase in body surface temperature by acupuncture and moxibustion treatments has been reported by many investigators (Maeda *et al*., 1998; Thomas, 1992; Zhang *et al*., 1991; Zhang *et al*., 1990). However, it is unclear how such body temperature elevation

affects lymphedema. We also paid attention to changes in deep body temperature with acupuncture and moxibustion treatments. When we measured both peripheral body surface temperature and deep body temperature, it was revealed that the higher the deep body temperature, the greater the degree of improvement of lymphedema, as expected. This suggests that the thermal effects of acupuncture and moxibustion treatments on lymph, which is mostly flowing in deep regions of the body, are largely responsible for the improvement of lymphedema.

Conclusion

When we performed acupuncture and moxibustion treatments for lymphedema and lymph cysts, occurring after intrapelvic lymph node dissection, which are not effectively treated by current Western medicine, very satisfactory results were obtained. When acupuncture and moxibustion treatments were initiated soon after surgery, such postoperative complications were observed. We are convinced that Oriental medicine should be integrated into Western medicine to improve the patient's quality of life.

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