

CLINICAL EXPERIENCE

Clinical Observation on the Acupuncture Treatment in Patients with Urinary Retention after Radical Hysterectomy

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ABSTRACT Objective: To observe the acupuncture therapy effect on the urinary retention after radical hysterectomy. **Methods:** Eighty cases of urinary retention after radical hysterectomy were randomly assigned to the treatment group and control group according to the random number table method, 40 cases in each group. From the 15th day post operation, the patients in the two groups started to be treated and 7 days as a course with 5 days treatment and 2 days interval. The treatment group applied acupuncture with modalities of common needling on Zusanli (ST36) bilaterally, electroacupuncture on Sanyinjiao (SP6), Shuidao (ST28), and Scalp Reproduction Area bilaterally, moxibustion on Shenque (CV8). The control group applied acupoint injection with vitamin B₁₂, and Sanyinjiao and Zusanli were selected. Take turns on both sides. The courses for the recovery of bladder function and residual urine volume for those who had voluntary micturition more than 200 mL after the first and second course of treatment were compared between the two groups. **Results:** Within 1 course and 2 courses of treatment, the patients with bladder function recovery in the treatment group were 21 (21/40) and 36 (36/40), and those in the control group were 12 (12/40) and 29 (29/40), both with a significant difference ($P<0.05$). After the first course and second course, residual urine volume for those who had voluntary micturition more than 200 mL in the treatment group was 91.7 ± 17.5 mL and 93.5 ± 15.5 mL, in the control group 102.4 ± 13.7 mL and 102.5 ± 15.7 mL, both with a significant difference ($P<0.05$). **Conclusions:** Combination of acupuncture modalities was better than acupoint injection for the recovery of bladder function in urinary retention after radical hysterectomy. It would shorten the course of treatment and get a better recovery, decrease urinary retention cases of refractoriness, and extending the treatment could raise the healing rate of urinary retention.

KEYWORDS acupuncture, radical hysterectomy, postoperative complications, urinary retention

Urinary retention is a common complication after radical hysterectomy. According to literatures, its incidence rate can reach 31.9%–52.4%.^(1,2) If there is no appropriate intervention, its duration will be longer and treatment will be more difficult. It may even cause urinary tract infection and vesical fistula, which will affect the patients' quality of life seriously. Researchers tried to improve operation methods for the purpose of reducing incidence of bladder dysfunction, such as laparoscopic nerve-sparing radical hysterectomy.^(3,4) However, this method may increase the possibility of uncontrollable tumor.⁽⁵⁾ It is much more suitable to be applied on the type Piver II, which is hyporadical hysterectomy. Abdominal radical hysterectomy at the moment remains the gold standard for the treatment of gynecologic cancers requiring a radical approach.⁽⁶⁾ So far, the cases of International Federation of Gynecology and Obstetrics (FIGO) stage I A2, I B1, II A, and some I B2 that need abdominal radical hysterectomy, bladder dysfunction, mainly urinary retention, may unavoidably occur. Japanese researchers tried to rebuild bladder function by stem cell.⁽⁷⁾ It may be beneficial for urinary

retention cases of refractoriness in the future, but it can not resolve current clinical problems. In this paper, the patients of urinary retention after radical hysterectomy with no acupuncture intervention before the study were selected and the effect of combined acupuncture modalities was observed.

METHODS

Diagnostic Criteria

Urinary retention after radical hysterectomy means that the patient does not have voluntary micturition or have voluntary micturition but residual urine volume more than or equal to 100 mL 14 days after radical hysterectomy.⁽⁸⁾

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Inclusion Criteria

The patients were 20 to 70 years old; hypogastric operation was performed for the first time; and normal liver and kidney function on preoperative test. The patients knew the facts of the research and permitted to participate and signed the informed consent.

Exclusion Criteria

The patients had diabetes or other serious medical conditions; or patients had paruria or urinary system infection or stone on preoperative test; they received radiotherapy or chemotherapy before the operation.

Clinical Data

All of the subjects were urinary retention patients after radical hysterectomy in this study at Sun Yat-sen Memorial Hospital from January 2008 to December 2009. There were a total of 80 cases, who never tried acupuncture intervention within 2 weeks postoperation and still needed urinary canal retained on the 14th day postoperation. The cases were randomly and equally assigned to the treatment group and the control group according to random number table method. There were insignificant differences between the two groups in age, body mass index, and childbearing history ($P>0.05$, Table 1).

Table 1. Comparison of General Data between the Two Groups ($\bar{x} \pm s$)

Group	Case	Average age (Year)	Body mass index	Childbearing history (Times)
Treatment	40	46.2 ± 8.6	23.6 ± 5.6	1.4 ± 0.9
Control	40	46.9 ± 8.9	24.2 ± 6.1	1.4 ± 0.7

Treatment

The patients of the two groups received the usual care and bladder function exercise after the operation. From the 15th day after operation, the patients were treated, every 7 days as a treatment course. The 5 days treatment was given successively,⁽⁹⁾ 2 days interval for rest, then urinary canals were pulled out on the 21st day postoperation. If the bladder function recovered, treatment would be stopped. If the bladder function had not recovered, the second course of treatment would be started from the 22nd day postoperation.

In the treatment group, acupoints Sanyinjiao (SP6), Zusanli (ST36), Shuidao (ST28), Shenque

(CV8), and Scalp Reproduction Area on both sides were selected on dorsal position. On the Sanyinjiao points, the needles were vertically needling; and on Shuidao, there is oblique needling toward the perineal region. There was equal needling on left and right sides of the Scalp Reproduction Area; needles were inserted into the above 3 pairs of acupoints with Deqi (得气). Then, the G6805- I electroacupuncture apparatus was applied to 3 pairs of acupoints with continuous wave and 4 Hz in frequency. Intensity should be as high as the patient could feel the vibration of electricity with no uncomfortable feeling. On the Zusanli point, the needles should be inserted vertically with Deqi, and it should be manipulated every 5 min. All the needles were retained for 30 min, while Shenque was applied with warming moxibustion.

In the control group, the patients were made to lie on dorsal position; 1 mL vitamin B₁₂ injection was applied to bilateral Sanyinjiao and Zusanli with 0.5 mL on every acupoint, taking turns on both sides. Vitamin B₁₂ injection was produced by Guangzhou Baiyunshan Tianxin pharmaceutical Co., Ltd., batch No. 080101 and 090103.

Observation on Curative Efficacy

The treatment courses needed for the recovery of bladder function after performing radical hysterectomy on the patients with urinary retention were observed.

Residual urine of those who had voluntary micturition of more than 200 mL after the first and second treatment course were observed. The recovery of bladder function means⁽⁸⁾ that the patient has voluntary micturition and residual urine volume less than 100 mL and the recovery degree of bladder function was judged by residual urine volume.

Statistical Analysis

All data were analyzed with SPSS 12.0 software for Windows. The numeration data were analyzed with χ^2 test, and measurement data were analyzed with *t*-test.

RESULTS

Comparison of the Bladder Function Recovery

Both of the cases of bladder function recovered in 1 treatment course, and 2 courses were

significantly different between the two groups. The results hinted that the bladder function recovery of the patients with urinary retention after radical hysterectomy was obviously promoted in the treatment group, and the intractable urinary retention cases were decreased. It also showed that extending the treatment could raise the healing rate of urinary retention as well.

Table 2. Comparison of Bladder Function in Patients with Urinary Retention after Radical Hysterectomy [Case (%)]

Group	Case	Recovery within one course	Recovery within two courses	No return after second course
Treatment	40	21 (52.5)*	36 (90.0)*	4 (10.0)
Control	40	12 (30.0)	29 (72.5)	11 (27.5)

Note: **P*<0.05, compared with the control group

Comparison of Residual Urine Volume

The residual urine volume of patients more than 200 mL when they finished the first and second treatment course were significantly different between the two groups (*P*<0.05), and the results hinted that the recovery of bladder function in the treatment group was much better than that in the control group.

Table 3. Comparison of Residual Urine Volume of Patients Who Had Voluntary Micturition more than 200 mL ($\bar{x} \pm s$)

Group	Case	Time	Residual urine volume (mL)
Treatment	40	Finished first course	91.7 ± 17.5*
		Finished second course	93.5 ± 15.5*
Control	40	Finished first course	102.4 ± 13.7
		Finished second course	102.5 ± 15.7

Note: **P*<0.05, compared with the control group, at the same time point

DISCUSSION

Compared with the previous study,⁽⁹⁾ it was found that the effects of acupuncture intervention for postradical hysterectomy in the early period (postoperation for 1 week) would be much better than those after 2 weeks. If acupuncture treatment was started 2 weeks after the operation when the urinary retention appeared, the treatment would be more difficult, the course of treatment would be longer, and the recovery of bladder function would be retarded. A few urinary retention cases of refractoriness even occurred. Because the surgical trauma is quite serious with long incisional opening, and the patient is very weak in the ultra-early period (postoperation within 5 days), acupuncture syncope may occur, and wound healing

may be affected if the acupuncture is applied in this period. Accordingly, 1 week after the operation for acupuncture intervention will be a suitable juncture.

The parasympathetic nerve in bladder areola, the nerve fiber of cardinal ligament and some outer nephric duct, pelvic plexus nerve, and its root located in superficial layer and deep layer of sacro-ligament will be unavoidably injured during radical hysterectomy. According to the clinical observation, acupuncture intervention at 1 week after the operation may be conducted for the injured nerves to recover first.

In clinical practice, bladder function exercise and acupoint injection are commonly used to treat urinary retention postoperation. Acupoint injection for treating mild cases of urinary retention, such as postoperation of caesarean section, has shown certain efficacy.⁽¹⁰⁾ However, its effect was still not sure for urinary retention due to radical surgery of abdominal tumor. In this research, the authors found that the recovery were not satisfied during treating urinary retention after radical hysterectomy by acupoint injection. Sometimes urinary retention cases of refractoriness even occurred. It will affect the patients' quality of life and further treatment, which may lead to a poor prognosis. Therefore, treatment modalities should be well-considered and systematic. Integrated with common acupuncture, moxibustion, and electro-acupuncture will be much better for the recovery of bladder function.

Zhongji acupoint, front-mu point of bladder, was not selected in this study because the median incision of hypogastric zone is usually used in the operation. To avoid affecting the wound healing, the author applied moxibustion on Shenque acupoint. This is located in the middle of the umbilicus, which is a key acupoint of the conception vessel that can control qi and blood all throughout the body and connect with 12 main meridians and zang-fu (脏腑) organs. Moxibustion on Shenque acupoint has the function of regulating triple energizer, strengthening bladder-qi transformation, and dredging obstruction. Sanyinjiao acupoint is a connecting acupoint of Pi (脾) meridian, Gan (肝) meridian, and Shen (肾) meridian and has the functions of invigorating Pi and alleviating water retention, smoothing Gan, and strengthening Shen. The application of Zusanli acupoint, a key

strengthening acupoint for the whole body, together with the Scalp Reproduction Area and Shuidao acupoint on local area, can achieve the functions of tonifying and lifting qi, activating yang, and promoting diuresis. The mechanism of treating bladder function disorder by electro-acupuncture still needs further investigation.

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