

Observation on clinical effects of Zhu Lian's type I excitation needling technique for postpartum urinary retention

朱璉兴奋法一型手法针刺治疗产后尿潴留临床疗效观察

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Abstract

Objective: To observe the clinical effects of Zhu Lian's type I excitation needling technique for postpartum urinary retention.

Methods: A total of 60 cases with postpartum urinary retention were recruited and divided randomly into an observation group and a control group, 30 cases in each group. The control group was treated with routine acupuncture, and stimulated with sparse and dense wave of electric acupuncture for 15 min after arrival of needling sensation, and then the needles were taken out. The observation group was treated with Zhu Lian's type I excitation needling technique, by inserting the needles with the quick inserting method, swift and temporary lifting and thrusting technique for shallow insertion for 5 times, by an in-and-out technique, without retaining the needles.

Results: The total effective rate was 96.7% in the observation group and 83.3% in the control group. The difference in the total effective rate between the two groups was statistically significant ($P < 0.05$). After the treatment, the first urination time was shorter in the observation group than that in the control group, with a statistical significance ($P < 0.01$). After the treatment, the volume of residual urine after the first urination was less in the observation group than that in the control group ($P < 0.01$).

Conclusion: Zhu Lian's type I excitation needling technique can effectively promote the voluntary urination and bladder emptying in patients with postpartum urinary retention, and it takes effect faster.

Keywords: Acupuncture Therapy; Electroacupuncture; Zhu Lian; Postpartum Period; Urinary Retention; Female; Famous Doctor's Experience

【摘要】目的：观察朱璉针刺兴奋法一型手法治疗产后功能性尿潴留的临床疗效。**方法：**共纳入产后尿潴留患者60例，随机分为观察组与对照组，每组30例。对照组给予常规针刺，得气后电针疏密波刺激15 min后出针；观察组给予朱璉针刺兴奋法一型手法针刺，采用快速刺入法进针，然后迅速短暂地提插浅刺5次，不留针，迅速抖出法起针。**结果：**观察组总有效率为96.7%，对照组为83.3%，两组总有效率差异具有统计学意义($P < 0.05$)。治疗后，观察组首次排尿时间短于对照组，组间差异有统计学意义($P < 0.01$)。治疗后，观察组的膀胱首次排尿后残余尿量少于对照组，组间差异有统计学意义($P < 0.01$)。**结论：**朱璉针刺兴奋法一型手法能有效促进产后功能性尿潴留患者自行排尿及排空膀胱，且起效迅速。

【关键词】 针刺疗法；电针；朱璉；产后期；尿潴留；妇女；名医经验

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Postpartum urinary retention refers to urinary disturbance in lying-in women presenting 5-8 h after childbirth, mainly manifested by unsmooth urination or no voluntary urination after childbirth^[1]. The lying-in women suffering from postpartum urinary retention may further develop distended bladder, affecting the contractions of the uterus. Moreover, over distension of the bladder is in risk of rupture^[2] and is easy to cause

postpartum hemorrhage in severe cases^[3]. Besides, postpartum urinary retention could induce infection of the urinary system after childbirth. Those factors are not beneficial to postpartum rehabilitation of the lying-in women. Therefore, early detection and intervention are essential to postpartum urinary retention. This study was designed to observe the influence of Zhu Lian's type I excitation needling technique and electric acupuncture on postpartum urinary retention and compare the therapeutic effects. Now, the report is given as follows.

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1 Clinical data

1.1 Diagnostic criteria

During the puerperium of the lying-in women, dribbling urination or urinary retention, distending and full sensation and pain in the lower abdomen, slight bulge in the lower abdomen, full bladder, painful by touching, and mostly no abnormality in the routine urine test^[4].

1.2 Inclusion criteria

In conformity with the above diagnostic criteria of postpartum urinary retention; aged between 20 and 35 years; pregnancy for 37-42 weeks before childbirth; willing to accept acupuncture treatment and signed the informed consent.

1.3 Exclusion criteria

Those patients complicated with pregnancy-induced hypertension, pregnancy-induced diabetes, hepatic and renal insufficiency that may influence the therapeutic effects; those patients under epidural analgesia in labor or cesarean section, or patients giving birth to giant baby; patients with urinary retention induced by the reason other than childbirth; and the patients complicated with contraindications to the therapy used in this study.

1.4 Rejection criteria

Lying-in women with postpartum hemorrhage and puerperal infection; patients treated without strictly following the rules requested in the observation; the dropping out patients; and those losing follow-up visits.

1.5 Statistical management

All data were processed with SPSS 13.0 version statistical software for statistical analysis. The counting data were expressed by mean \pm standard deviation ($\bar{x} \pm s$). The enumeration data between the two groups were processed by Chi-square test. The measurement data were compared by two independent sample *t*-test. If heterogeneity variance existed, the revalidation was processed by homogeneity test of variances after data conversion. $P < 0.05$ indicated a statistical difference.

1.6 General data

The recruited 60 cases with postpartum urinary retention were the patients treated in Nanning First People's Hospital between May of 2015 and September of 2016, all mothers of natural childbirth, at the age between 21 and 35 years, in pregnancy for 38-41 weeks at the childbirth. The patients were divided by the random digits into an observation group and a control group, 30 cases in each group. The differences in gender and duration of pregnancy between the two groups were not statistically significant (all $P > 0.05$), indicating that the two groups were comparable (Table 1).

Table 1. Comparison of the baseline data between the two groups

Group	<i>n</i>	Average age ($\bar{x} \pm s$, year)	Average pregnancy duration ($\bar{x} \pm s$, week)
Observation	30	28.7 \pm 3.7	40.2 \pm 4.1
Control	30	28.6 \pm 4.6	40.6 \pm 3.9

2 Therapeutic Methods

2.1 Acupoints

The same acupoints were selected for the two groups, Guanyuan (CV 4), Zhongji (CV 3), bilateral Ciliao (BL 32) and Weizhong (BL 40).

2.2 Intervention methods

2.2.1 Observation group

After the skin was disinfected with 0.5% iodine, the acupoints were punctured by Zhu Lian's type I excitation needling technique with filiform needles of 0.25 mm in diameter and 25 mm in length or 0.25 mm in diameter and 40 mm in length (Hwato brand). The needles were inserted by the fast insertion method, and then lifted and thrust quickly and shortly for shallow insertion for 5 times, till the patient felt a short pain, distending and/or electric sensation. The needles were taken out quickly with a shaking method without retaining. The treatment was given once every day.

2.2.2 Control group

After the skin was disinfected with 0.5% iodine, the acupoints were punctured with routine acupuncture and then connected with G6805 acupuncture apparatus, with a sparse-dense wave, at frequency of 0.2-0.3 Hz, with gradual increase of electric current till reaching the tolerance of the patients. The treatment was given for 20 min each time, once every day.

The patients of the two groups were treated for 5 sessions. After 5 sessions, the therapeutic effects were assessed.

3 Observation of Therapeutic Effects

3.1 Observed items

The study was designed to observe the patient's time of first urination after the treatment and volume of residual urine after first urination. The patient's time of first urination after the treatment referred to the starting time of the first treatment to the starting time of first urination. The patient's volume of the residual urine after first urination was determined by B ultrasonic scan.

3.2 Criteria of therapeutic effects^[5]

Cure: Smooth urination occurred within 1.5 h after the treatment, and the clinical symptoms basically disappeared.

Remarkable effect: Urination could occur within 1.5 h after the treatment, but in a little volume, and the symptom of distending sensation in the abdomen was somewhat relieved.

Failure: The patient was still unable to urinate voluntarily after the treatment.

3.3 Results

The patients of the two groups all finished the required treatment and examinations by this study,

without dropped-out cases.

3.3.1 Comparison of therapeutic effect between the two groups

The total effective rate was 96.7% in the observation group and 83.3% in the control group. There was a statistical difference in the total effective rate between the two groups ($P < 0.05$), (Table 2).

Table 2. Comparison of therapeutic effect between the two groups (case)

Group	<i>n</i>	Cure	Remarkable effect	Failure	Total effective rate (%)
Observation	30	20	9	1	96.7 ¹⁾
Control	30	17	8	5	83.3

Note: Compared with the control group, 1) $P < 0.05$

3.3.2 Comparison of first urination time and residual urine volume after first urination between the two groups

After the treatment, the first urination time was shorter in the observation group than that in the control group. In comparison of first urination time between the two groups, the difference was statistically significant ($P < 0.01$). After the treatment, the volume of residual urine after the first urination was less in the observation group than that in the control group, and the difference between the groups was statistically significant ($P < 0.01$), (Table 3).

Table 3. Comparison of first urination time and residual urine volume after the first urination between the two groups ($\bar{X} \pm s$)

Group	<i>n</i>	First urination (hour)	Residual volume after first urination (mL)
Observation	30	2.50±1.16 ¹⁾	11.47±3.14 ¹⁾
Control	30	5.60±1.34	40.63±10.92

Note: Compared with the control group, 1) $P < 0.01$

4 Discussion

Postpartum urinary retention belongs to the scope of 'retention of urine' in traditional Chinese medicine. It is often caused by injury of qi due to childbirth or long-term compression to the bladder due to prolonged childbirth, resulting in poor circulation of qi and blood and hence qi dysfunction of the bladder. Because the pathological location of this disease is in the bladder, Guanyuan (CV 4), Zhongji (CV 3), bilateral Ciliao (BL 32) and Weizhong (BL 40) were selected as the therapeutic acupoints in this study^[6-10]. Guanyuan (CV 4) is used to reinforce and benefit Yuan-Primary qi of the lower jiao, in order to restore the consumed and injured qi after childbirth to restore qi activity of the bladder. Zhongji (CV 3), the Front-Mu point of the bladder, is an acupoint

where qi of the Bladder Meridian gathers in the abdomen, an important acupoint to assist yang to turn into qi and promote urination in the treatment of bladder diseases. Ciliao (BL 32), an acupoint of the Bladder Meridian, is located exactly in front of the bladder, and around the bladder with Zhongji (CV 3) and Guanyuan (CV 4). These three acupoints can dredge qi of the Bladder Meridian and promote urination. Weizhong (BL 40) is the lower He-Sea point of the bladder and was selected based upon the theory of treating internal Fu organs with the He-Sea points.

For patients with postpartum urinary retention, the traditional physical method is often used clinically to induce urination and would be replaced by catheterization if not effective, but would aggravate the patient's suffering^[11]. Zhu Lian's type I excitation needling technique is created by Zhu Lian^[12], a modern famous acupuncturist, based upon the principle of two processes of excitement and inhibition in activities of cerebral cortex. The excitement method is suitable for the treatment of flaccid paralysis, hypesthesia or sensory deprivation, slow response, or excessive inhibition of psychomotor activity. This kind of needling technique can produce a good stimulation to the cerebral cortex, so as to destroy the over-limit inhibition of the cerebral cortex and wake up the normal excitement^[13]. Zhu Lian's type I excitation needling technique is short in operation, usually from several seconds to one or two minutes, without retaining the needle. The patient could have strong needling sensation, i.e. short pain, distending and electric sensation. This needling technique is suitable for flaccid paralysis, hypesthesia or sensory deprivation or inhibition, etc.

It is believed in modern medicine that during childbirth, because the uterus is forcefully pressed by forceful breath holding or forceful use of obstetric forceps, the bladder would be pushed downward, and at the same time would induce excessive stretching

tension in the sacral ligament and main ligament of the uterus, which could compress their concomitant parasympathetic nerve and inhibit the normal excitement of the parasympathetic nerve, so as to influence the normal contraction of the bladder sphincter, and cause failure of the bladder muscle in normal contraction, resulting in retention of urine inside the bladder, and hence postpartum urinary retention^[14]. Additionally, during childbirth and pregnancy, stretching and contusion produced on the bladder can induce congestion and edema on the bladder mucosa, forming ecchymosis or hemorrhage, and causing decrease of sensitivity and muscular tension of the bladder especially when edema occurs at the bladder triangle and internal urethral orifice, leading to retention of residual urine inside the bladder and failure of complete urination^[15]. The administration of antispasmodics and sedatives at large dose before or during childbirth, over stress of the lying-in women are also the reasons to cause postpartum urinary retention^[16].

In this study, in stimulating Guanyuan (CV 4) and Zhongji (CV 3) by Zhu Lian's type I excitation needling technique, the needling sensation is requested to radiate to the perineum, because it is able to effectively regulate contractions of the sacral ligament and cardinal ligament of the uterus, in order to promote its movement in rhythm, relieve compression to the parasympathetic nerve and change the impact of the parasympathetic nerve on the detrusor and sphincter of the bladder^[17], and alleviate paralysis of the bladder muscles and restore the voluntary urination of the patients. The functions of the bladder are mainly regulated by the two to four sacral segments of the pelvic nerve. Ciliao (BL 32) we selected is located at the second sacral foramen, with the second sacral nerve in the deep area. In stimulating Ciliao (BL 32) by Zhu Lian's type I excitation needling technique, the needling sensation is requested to radiate to the perineum, because it is able to regulate the 2-4 sacral segments of the pelvic nerve, and further excite the detrusor and sphincter in rhythmical contraction and stretching, and improve the functions of the detrusor and sphincter, so as to complete urination jointly. Therefore, the excitement of the nerves can be regulated by puncturing those acupoints, so as to regulate the functions of the bladder and urethra^[18]. By the regulation of the above nerves, it can enhance the sensitivity of the bladder, beneficial to complete discharge of postpartum residual urine. Additionally, the stimulation by type I excitation needling technique can effectively improve micro-circulation, alleviate mucosal edema and help the bladder to restore the muscular tension^[19]. In stimulating Weizhong (BL 40) by Zhu Lian's type I excitation needling technique, the needling sensation is requested to radiate to the heel, for it can remotely and jointly regulate the rhythmical contraction

and stretching of the detrusor and sphincter by stimulating the tibial nerve in the deep area of Weizhong (BL 40). At the same time, the stimulation by type I excitation needling technique can reflexively excite the spinal cord and superior urination center, in order for the urination center to discharge pulsation downward to the bladder to govern the detrusor and sphincter inside the bladder, and promote them to regulate the movement jointly for completing the urination reflux, so as to effectively treat urinary retention induced by spiritual stress in the lying-in women^[20].

The results of this study showed that the total effective rate was obviously higher in the observation group than that in the control group, with a significant difference between the two groups ($P < 0.05$), and the first urination time was obviously shorter in the observation group than that in the control group. Moreover, the volume of residual urine after the first urination was less than that in the control group, with a significant difference between the groups ($P < 0.01$). These results indicate that Zhu Lian's type I excitation needling technique can promote the voluntary urination and bladder emptying in the patients with postpartum urinary retention, producing fast therapeutic effect, and needs to be popularized clinically.

Conflict of Interest

The authors declared that there was no potential conflict of interest in this article.

Statement of Informed Consent

Informed consent was obtained from all individual participants included in this study.

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