Clinical observation of auricular acupoint therapy for pain in early-stage extremity trauma

Clinical Study

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Abstract

Objective: To observe the efficacy of auricular acupoint sticking based on conventional treatment in treating pain in early-stage extremity trauma.

Methods: A hundred eligible patients with acute soft tissue injury or acute closed fracture were randomized into an observation group and a control group by their admission sequence, 50 cases in each group. The two groups both received routine management including routine checking, external fixing, traction, raising up the affected limb, etc., as well as cold compress with Chinese medication (Xiao Zhong Zhi Tong Powder). In addition to the routine management, the control group was given oral administration of amidopyrine and phenacetin compound tablet, 1 tablet per dose, twice a day, which was then taken only when necessary or terminated after pain subsided. The observation group was given auricular acupoint sticking in addition to the routine management. The two groups were compared in terms of numerical rating scale (NRS) score, therapeutic efficacy and adverse reactions after pain was relieved.

Results: After the intervention, the NRS scores dropped significantly in both groups (\( P < 0.01 \)); the NRS score in the observation group was significantly lower than that in the control group (\( P < 0.05 \)). The total effective rate in the observation group was superior to that in the control group (\( P < 0.05 \)). There were no severe adverse reactions in the two groups.

Conclusion: Based on routine management, auricular acupoint sticking can produce a more significant efficacy in treating pain in early-stage extremity trauma compared to amidopyrine and phenacetin compound tablet; it can effectively reduce pain of the affected limb and prevent complications; it’s easy-to-operate and safe; patients can learn and understand it easily; its efficacy is confirmed; it enhances the satisfaction degree of the inpatients. Therefore, this method is worth promoting in clinic.

Keywords: Auricular Acupoint Sticking; Extremities; Pain; Pain Measurement; Soft Tissue Injuries; Fractures, Bone

Acute soft tissue injury or acute closed fracture are mostly caused by improper gesture in physical exertion or exercise, inducing topical muscular and fascia injury, rupture of blood vessels, blood stagnation and pain. Without proper treatment or if it happens in old or weak people, external pathogens will intrude and aggravate qi-blood stagnation, resulting in blocked meridians and vessels, swelling and severer pain. The aggravation of pain usually happens in 24-72 h after the injury. The duration and severity of pain greatly affect patient’s rest and prolong the recovery. There are various methods to treat the pain in early-stage extremity trauma, including elevation, ice and compression. During recent years, auricular acupuncture and auricular acupoint sticking have been reported to successfully treat many kinds of diseases. We applied auricular acupoint sticking to...
treat early-stage extremity trauma for reducing pain. The report is given as follows.

1 Clinical Materials

1.1 Inclusion criteria
Acute soft tissue injury or closed fracture of unilateral limb followed by mild or moderate pain; time from the injury to hospital admission <12 h; age >18 years old, and able to express his own will; willing to participate in the study and having signed the informed consent form.

1.2 Exclusion criteria
Mental disorder or dysgnosia, unable to comprehend the pain degree; severe dysaudia or communication barrier; coupled with old injuries or severe heart, lung or kidney dysfunction; allergic to fabric plaster.

1.3 Statistical method
The SPSS 15.0 version statistics software was adopted for data analysis. The normally distributed measurement data were expressed by mean ± standard deviation (X±s) and analyzed by t-test; those not in normal distribution were analyzed by rank-sum test. The enumeration data were processed by rank-sum test. P<0.05 indicated a statistical significance.

1.4 General data
A hundred subjects were recruited from the trauma patients admitted to our hospital from January 2016 to September 2016. They were randomized into an observation group and a control group by their admission sequence, 50 cases in each group. There were no significant differences in comparing the general data between the two groups (all P>0.05), indicating the comparability (Table 1).

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

<table>
<thead>
<tr>
<th>Group</th>
<th>Gender (case)</th>
<th>Average age (X±s, year)</th>
<th>Injury duration (X±s, h)</th>
<th>Affected extremity (case)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation</td>
<td>26</td>
<td>24</td>
<td>41.6±13.8</td>
<td>10.6±5.4</td>
</tr>
<tr>
<td>Control</td>
<td>19</td>
<td>31</td>
<td>43.1±15.1</td>
<td>9.2±6.6</td>
</tr>
</tbody>
</table>

2 Treatment Methods

The two groups of patients all received the same routine treatment, including external fixing, traction, raising up the affected limb, and cold compress with Chinese medication for releasing swelling and pain. The prescription consisted of Da Huang (Radix et Rhizoma Rhei) 100 g, Huang Bai (Cortex Phellodendri) 20 g, Zi Jin Pi (Radix Tripterygium Hypoglaucum) 20 g, Zhi Zi (Fructus Gardeniae) 20 g, Sang Bai Pi (Cortex Morii) 20 g, Tian Nan Xing (Rhizoma Arisaematis) 20 g, Chong Lou (Rhizoma Paridis) 20 g, Hong Hua (Flos Carthami) 20 g, Chai Hu (Radix Bupleuri) 20 g, Ge Gen (Radix Puerariae) 20 g, Xuan Ming Fen (Matrii Sulfas Exsiccatus) 20 g, etc[15]. The Chinese medication was decocted by specific machine and packed under strict aseptic processing (280 mL each pack). The medication packs were stored in 10 ℃ fridge in summer and autumn and kept at natural temperature in winter and spring. For application, the medication was first unpacked to pour onto a piece of disposable cotton pad. The pad was then placed on the swelling area. The application was performed twice a day, 20-30 min each time, and terminated when the swelling and pain were gone.

2.1 Control group
Besides the routine management, patients in the control group were prescribed with amidopyrine and phenacetin compound tablet (lot number: 20150595, produced by Huazhong Pharmaceutical Co., Ltd., China) via oral administration, 1 tablet each time, twice a day. The drug was taken only when necessary or thoroughly terminated when the pain subsided.

2.2 Observation group
In addition to the routine intervention, patients in the observation group were given auricular acupoint sticking instead of amidopyrine and phenacetin compound tablet.

Major acupoints: Shenmen (TF4), Subcortex (AT4), Kidney (CO10), and Liver (CO12)[16].

Adjunct acupoints: Shoulder (SF4,5), Elbow (SF3) and Wrist (SF2) were added for those with upper-limb trauma; Knee (AH4), Ankle (AH5) and Toe (AH10) were added for those with lower-limb trauma[17].

Operation: The auricle was sterilized by using 75% alcohol cotton and then slowly gently and evenly pressed with a probe to detect the sensitive points. The Wang Bu Liu Xing (Semen Vaccarieae) plasters were applied to the selected points and pressed with thumb and index finger till the auricle became distending and hot. Each point was supposed to be pressed 3-6 rounds every day, 30-50 times each round at a frequency of 60-80 times/min, 2 d as a treatment course, better to produce a numb and distending sensation. Patients with sleep disorders were suggested to add one more round before going to bed. The treatment was conducted for 2-3 courses in total and terminated when the pain subsided to a mild degree or totally disappeared.

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