

The Effect of Massage of Hugo Point on Severity of Pain in Patients Undergoing Laparoscopic Cholecystectomy: a Randomized Clinical Trial

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Abstract

Introduction & Objective: Tissue injury after surgery produces painful sequelae. Environmental factors can also be effective on a patient's pain. In most pain control pharmacological methods are used but they can be associated with various complications. Use of complementary medicine and non-pharmacological methods for reduction of pain is considered a simple, effective method, and often without specific complications, but despite the many benefits, few studies have been conducted on clinical effects. So this study was performed with the aim to determine the effect of massage of Hugo point on severity of pain in patients undergoing laparoscopic cholecystectomy.

Methods and Implementation procedure: The present research was a clinical trial study. The sample size of this study included 52 patient candidates for laparoscopic cholecystectomy who were eligible for inclusion in the study. Sampling was conducted in surgical wards of Shahid Beheshti Hospital, Shohadaye Gorname Hospital and Razi Surgery Center of Yasuj city. Samples were divided into two groups based on random allocation blocks. Data collection tools included questionnaires of demographic information, vital signs Check list and numerical scale measurement of severity of pain. Interventions related to each group were conducted based on intervention protocol and based on compliance guidelines (six times measurements for each group). Data, after gathering, were investigated and compared by SPSS software, version 20 and by descriptive statistics (mean, standard deviation) and analysis test (Wilcoxon, Kruskal-Wallis and Tukey).

Findings: Results of this research indicated that the effect of massage of Hugo point on severity of pain in patients, was effective and in all six interventions and measurements resulted in a considerable significant reduction of pain compared to pre-intervention. Also, the comparison with the control group was significantly different, so that on a numerical scale the survey severity of pain was 0-10, mean of severity of pain at the end of study in the control group was 7.1 to 4, and in massage group reached from 7.7 to 1.3. Although in both groups, the severity of pain was reduced, this reduction in the intervention group compared to the control group was more prominent.

Conclusion: According to the results of this study performing intervention massage of Hugo point lead to effectively and significantly reduce pain in comparison with the control group, in patients undergoing laparoscopic cholecystectomy. Therefore, it is suggested massage of the Hugo point as part of nursing interventions and side interventions and routine care nursing should be used.

Key words: Massage, Hugo point, Pain, Cholecystectomy

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Introduction

Surgical procedures and tissue injury cause reactions in the body, such as production of pain-causing materials such as prostaglandins, Bradykinin, hydrogen ions, lactic acid, and serotonin. This material stimulates pain receptors chemically and those that have the greatest impact are prostaglandins and Bradykinin(1). Patients experience the highest severity of pain in the first 48 hours after surgery. Studies indicate that 20 percent of patients have mild pain, and 20-40% moderate pain, and 40-60 % will experience severe pain (2). Nowadays pain in nursing care, is one of the most important nursing diagnosis and basic nursing concepts discussed (3). Effective management of pain, which includes prevention, control and pain reduction is an important standard and priority in nursing care(4). Pain after cholecystectomy surgery is also important for nursing diagnosis and investigation and its relief is one of the main goals of nursing. Because nurses spend most time with patients and in relation to investigation and control of pain, and performed provision of care and other nursing acts such as palliative care measures, including bringing routine sedative drugs and non-pharmaceutical control for relief of patient's pain and then evaluation of the effects of these measures in order to ensure an acceptable level of pain relief for patients(5). Providing quality nursing care and suitable care, especially in relation to pain control of patients, nurses have a significant effect on reducing the repetition and severity of pain in the patient and consequently accelerate the recovery process(6). In a similar focus the American Pain Society has called pain the fifth vital sign and have labeled 2001 to 2010 the decade Pain Control(7). In addition, the World Health Organization has also set up a Commission under the name the Joint Commission for accreditation of Healthcare Organizations and has announced that from the time of admission to discharge of patients, pain should be continuously monitored and (6). Because, effective pain control increases the satisfaction of patients, facilitates rapid recovery and return to previous levels of function, reduces the symptoms of disease and the facilitates earlier patient's discharge (8).

Usually, pain control in surgical patients involves sedatives and opioids. Medicinal pain control involves the non-narcotic, and non-steroid therapy, although analgesic therapy is the strongest tool available (8). Approximately 9-15% of cases of drug use is associated with drug reactions, and 10-20% of the hospitalizations are caused by harmful drug reactions(9). Ample research indicates inadequate pain management even with the existence of the research in recent decades and the availability of effective analgesics and available, there are still a large number of patients with mild to severe pain(10). This indicates that sedatives and opioids drugs alone cannot always provide appropriate pain relief. Therefore, non-pharmacological methods of pain relief that emphasize on an intervention which causes distraction, relaxation, relieves anxiety and thus reduces the perception of pain may be useful(11).

Acupressure is included among these non-pharmacological methods of decreasing pain without the use of special equipment and it can be done with just the hand. I

Acupressure uses stimulation of points by Needle therapy, using pressure and massage (12). The evidence, indicates that this method, will decrease and relieve chronic pain of the waist and neck (13, 14). With massage large fiber stimulation with neural impulses that transmit to the spinal cord may be provoking. If this stimulation is continuous it can cause a 'closed gate of pain transmission' and as a result reduction of pain sensation will (14, 15). Also, research clearly suggested that ice-cold (which applies in the massage of Hugo point) can block the sensory fiber(16). On the same basis, the researchers indicated that massage in that area with connection between the thumb and finger (Hugo point) in 50% of cases causes reduction of severe dental pain (which is an acute pain)(12).

So with respect to cases previously mentioned in the field of complementary medicine done by nurses with limited studies, especially in Iran and in particular studies of massage techniques of Hugo point are limited, so the present study was designed and aimed to determine the effect of massage of Hugo point on severity of pain of patients undergoing laparoscopic.

Methods

The present study is a randomized clinical trial, which is registered with code IRCT2016021126522N1 in the Iranian clinical trials website. Sampling done was cross-sectional and was carried out from April till July 2016. Patients undergoing laparoscopic cholecystectomy surgery were studied for the impact of the intervention. Samples were selected from those who met the with inclusion. Then samples were divided into two groups based on random allocation.

With the use of similar studies (17, 18), and tables of estimate the sample size in the analysis of variance with the below parameters was done:

$$P_1=0/85, P_2=0/5, \alpha=0.05, \beta=0.2.$$

$$N = \frac{(Z_1 - \frac{\alpha}{2} + Z\beta)^2 \times P_1(1-P) + P_2(1-P_2)}{(P_1 - P_2)^2} = 24=25$$

Study was executed after obtaining the confirmation of the University Ethics Committee and providing a biography written to the sectors of surgery, Shahid beheshti hospital, Shohadaye Gomnam hospital and Razi's surgical Center. For sampling, cases were identified from patients hospitalized in surgery wards who were to undergo laparoscopic cholecystectomy surgery and who met the inclusion criteria were identified. Each sample was informed about the purpose of the and after obtaining written permission from the patient and giving assurance to the patient that they would not be harmed nor would the study interfere in the process of their therapy, then the study commenced. Inclusion criteria included surgery by laparoscopic procedure, good health in the hands of the participant, especially the thumb, having rated severity of pain as average and higher (based on the numerical severity of pain scale, 3 and above), not in a clinical job, having attained full consciousness after surgery, not

addicted to illicit drugs, sedatives and alcohol, lack of hearing impairment, lack of experience in the use of the massage of Hugo point, lack of chronic pain in other parts of the body, such as migraine and backache.

Before going to the operating room the required variables and forms were completed. After six hours from leaving the operating room the samples were interviewed, forms were completed and the desired variables were evaluated. To create the same conditions for the interventions and for the privacy of patients, curtain were drawn around the beds.

Data collection tools included demographic information questionnaire, vital signs record forms and numerical pain scale. Demographic information questionnaire was in two parts. Part I was on demographic characteristics and part II information related to the disease. A numerical scale was used to assess and measure pain severity of patients. Studies have shown that a numerical classification scale for assessing the severity of pain has a good reputation and is frequently used in different research. The numerical scale for assessing pain, used 10 grades scaled that a score of ten for the most intense pain and a score of zero, was considered painless. Based on this scale, the patients, according to their current state determined severity of their pain on a ten-point scale. The numerical tool was the most commonly used tool for measurement of pain. In addition, this scale has good validity and reliability. The most important feature of these tools is ease of use. Achieving a score of 1-3 reflects mild pain, 4-7 moderate pain, and 8-10 represents severe pain(19). In numerous studies validity and reliability of this tool has been confirmed (20). In Iran, the coefficient of reliability of this scale with correlation coefficient $r = .88$ has been confirmed(17). In another study, the level of validity and credibility of this scale was estimated at about about .76 and its reliability was determined by different methods from 0/77 to 0/84 (18, 21).

Interventions on male patients was done by a male researcher and female patients by a female researcher on the basis of the intervention protocol. In total, six interventions were performed. Interventions were done at approximately 6, 12, 24, 36, 48, and 60 hours after surgery. Severity of pain was measured before and after each intervention. In order to perform the massage we asked of the patients to be put in an arbitrary position. To do the intervention, researcher's faced the patient and at the times when the patient's pain was a t a score of 3 on the numerical pain measurement scale, the researcher placed their own right hand thumb on small bags of ice and pushed it on the right hand Hugo point of the patient with continuous pressure. To prevent creating discomfort, from the pressure of deep-rolling around the Hugo point and to some extent creation changed color of the nails being applied by the researcher. This action was repeated three times, and then severity of pain of patients measured (after 30 minute interventions). To check the suitability of the time and be effectiveness each time the following list of emotions were enquired about including a feeling of

warmth, numbness, anesthesia, pain, heavy and peace. Interventions continued for three days and six interventions were done.

The collected data was encoded and entered in software SPSS IBM under Windows version 20 and through descriptive statistics, such as tables, and central and dispersion indices. Also according to non-normal data distribution of the statistics test such as Kruskal-Wallis, will Kaksoon and Tukey for analysis and comparison within the -group and between groups of intensive pain. Confidence intervals were at 95% & $p < 0.05$.

Findings

There were no significant difference between the two groups reviewed in demographic and context variables ($P > 0.05$) and both groups were matched (Table 1). There was no significant differences in severity of pain of patients before doing the surgery in both groups studied ($p < 0.05$). After the surgery the patients severity of pain increased (Chart 1 - page 91).

In comparison within the group, reducing the severity of pain was observed and the reduction in the intervention group in all 6 interventions was

statistically significant (Table 2). The severity of pain in the intervention group compared to the control group was significantly less and this difference was statistically significant ($p < 0.05$), (Table 3).

It also outlines that it greatly reduced the pain over time. But this reduction in the intervention group (massage of Hugo point) was dramatically and statistically more than in the control group ($p < 0.05$). The average severity of pain at the end of the study compared with the beginning of the study in the control group fell from 7.1 to 4 and in the massage group fell from 7.7 to 1.3.

Discussion and Conclusions

The results of this study support doing intervention massage of Hugo point six times to cause a significant decrease in severity of pain compared with the control group. Studies have shown that the mechanism of the effect of massage of the Hugo point in pain relief is caused by increased secretion of endorphins in patients(22). The practice should be done with the presence of a researcher at the bedside of the patient because pain often is subjective and influenced by psychological factors and feelings. The presence of the researcher by the bed can reduce its severity.

The positive effects of massage on the other studies have been observed. In study of Abdul-Aziz and Mohammed (2014) they found massage therapy after surgery effectively reduces the severity of the pain in patients(23). The results of another study also showed that massage increases the secretion of endorphins and reduces the amount of pain in

Table 1: Comparing the mean of background variables in the two study groups

group	variable	BMI	weight	height	age
Hugo point massage	Mean ± SD	26.6±3.4	73±8.4	166±5.2	47±12.7
control	Mean ± SD	27.3±3.1	76±8.1	167±6.3	49.5±10.5
Chi-square	x2	1.6	6.6	3	2.4
	P-value	0.443	0.36	0.214	0.3

Table 2: Comparing the mean, the standard deviation And mean Rank of pain severity in groups

group		T ₀	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆
Hugo point massage	mean ± SD before	6.5±1.2	7.7±1.7	6.8±1.1	5.3±1	4.5±1	4±1	3.5±0.5
	Mean ± SD after	7.5±1.7	5.9±1.6	4.4±1.3	3.1±1.4	2.5±1.2	2.3±1.3	1.3±0.5
	mean rank of negative change	0	13.5	13.5	13	13	13.5	14
	mean rank of positive change	6	0	0	0	0	0	0
	Negative change	0	26	26	25	25	26	27
	Positive change	11	0	0	0	0	0	0
	No change	16	1	1	2	2	1	0
	Z	-2.9	-4.5	-4.5	-4.43	4.4	-4.5	-4.5
	p-value	0.003	0.001	0.001	0.001	0.001	0.001	0.001
Control	mean ± SD before	6±1	4.1±1.7	6.5±1.4	6±1	6±1	5±1.5	4±0.8
	Mean ± SD after	7.1±1.7	7±1.7	6.5±1.4	5.9±1	6±1	4.8±1	4±1
	mean rank of negative change	0	1	0	0	0	0	0
	mean rank of positive change	10.5	0	0	0	0	0	0
	Negative change	0	1	0	0	0	0	0
	Positive change	20	0	0	0	0	0	0
	No change	5	24	25	25	25	25	25
	Z	-3.9	-1	0	-0.8	0	-1	0
	p-value	0.001	0.317	1	0.889	1	0.120	1

(Comments: T₀: Comparison of pain severity before surgery with 6 hours after surgery. T₁-T₆: Comparison of pain severity before and after interventions)

Table 3: Compare the Mean of pain intensity in the two groups in post hoc Tukey test

group	variable	BMI	weight	height	age
Hugo point massage	Mean ± SD	26.6±3.4	73±8.4	166±5.2	47±12.7
control	Mean ± SD	27.3±3.1	76±8.1	167±6.3	49.5±10.5
Chi-square	x2	1.6	6.6	3	2.4
	P-value	0.443	0.36	0.214	0.3

patients(22). A further study also indicated that after doing massage reduction of the rate of pain in the massage therapy group compared with the control group was very obvious(24). The results of the another study where the aim of investigation was the effect of hand massage on patients who had undergone surgery showed that the mean severity of pain reduced from 4/64 to 2/35 and that the rate of difference before and after the intervention was statistically significant. (25). The results of another study was to examine the impact of ice massage on pain of childbirth and indicated that ice massage on the Hugo point reduces the severity of the pain of childbirth(12). Influence of foot reflection massage on abdominal pain and chest surgery has been investigated. The outcomes of the results suggest that use of foot reflection massage can reduce the severity of pain in chest and abdominal surgery patients and reduces their need for effective analgesic drugs

and Pethedine(26). The results of another study conducted by Rakhsheshkorshid et al (2013) showed that the use of Acupressure causes a significant decrease in severity of pain of indysmenorrhea, in the intervention group compared to the control group(27). Therefore it seems the techniques such as massage therapy, can make simple, effective and important impacts on pain reduction in patients.

To the best of our knowledge, this is one of the very few studies that describe the benefits of implementing Hugo point massage therapy to pain relief in cholecystectomy patients. Therefore it can be said that the present research on Hugo point in the massage group compared to the control group, lessened severity of pain. Although in this study, the results of research suggest that pain lessened over time in both groups, reduction of the severity of the pain, in the intervention group

was more than in the control group. Since recovery from pain accelerates in healing this shows the importance of the application of complementary medicine at the patient's bedside. Finally, with regard to this methods such as massage of Hugo point is a very simple, cheap, and available intervention and is safe and with no side effects so it can be an appropriate option for reducing the pain of surgery, alongside the standard treatment and routine nursing care and palliative.

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