Original Article

The comparison of pain after gynecology laparoscopic surgery in two different intra-abdominal pressure

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ABSTRACT

Introduction: The use of laparoscopy as a new technology in medical science has increased over the last few decades. One of the uses of laparoscopy is pelvic examination and gynecological surgery. The role of laparoscopy in the treatment of gynecological surgery is being studied further. Laparoscopy, despite the many benefits it has, has some limitations. We decided to compare the amount of pain after gynecology laparoscopic surgery in two different intra abdominal pressure. The sampling method was using a random number table. Materials and methods: This study was a double blind clinical trial. A total of 84 female candidates for gynecology laparoscopic surgery who referred to the women ward of Shahid Sadoughi Hospital in Yazd were enrolled in two groups. 40 patients in group with blood pressure 12 mm. Hg (group A) and 44 in group with blood pressure 15 mm. Hg (group B). The study variables were: Patients' age, Gravidity, Parity, BMI, history of previous illness, duration of operation, duration of hospitalization and postoperative pain at 6-12 hours after surgery using VAS scores were recorded. Finally, the collected data were entered into SPSS version 17, using statistical tests were analyzed. Result: The results showed that the mean age of the patients was 32.54 ± 7.9. The mean scores of pain were 6 hours after surgery in group A, 5.5 ± 1.7 and in group B, 1.6 ± 5.9, and the mean score of pain was 12 hours after surgery in group A, 1.6 ± 2.1 and in group B, 1.5 ± 2.29. There was no statistically significant difference between the mean scores of pain 6 hours after surgery and the mean score of pain 12 hours after surgery in the two groups (P-value >0.05). Conclusion: According to results, can be concluded the in different intra-abdominal pressures, the amount of pain after gynecology laparoscopic surgery is not statistically significant.

Keywords: Pain, laparoscopic, intra abdominal pressure

Introduction

Over the past four decades, we have witnessed the rapid advancement of laparoscopic technology since the 1970s. The use of light and high resolution video cameras in laparoscopic surgery simplifies the observation of the pelvis during complicated surgical procedures [1, 2]. Then, many other techniques that were performed with traditional techniques were made easier by using laparoscopy, such as surgical procedures on uterine adjuvants such as ectopic pregnancy and ovarian cystectomy, uterine surgeries, such as myomectomy and hysterectomy, regeneration of the pelvic floor, such as retropobic otroproxis and colposuspension. However, laparoscopic methods may have some disadvantages in some patients. Although some laparoscopic methods seem to reduce the cost and complications of surgery, in some cases these are good alternatives to surgical techniques. The value of this method and other methods and Endoscopic surgery indications is still under investigation. Objective lens can be placed so that it to be able to see the peritoneal cavity with wide angle. The clarity and intensity of optics can provide better attention to details than the naked eye [3]. Laparoscopy is the standard method for detecting endometriosis and adhesions, because other visualization technique can not be so sensitive and specific. The role of Laparoscopy is evolving in the treatment of gynaecologic diseases. Many surgical procedures are possible in the field of traditional abdominal surgery and laparoscopy.

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Laparoscopic surgical implications include less hospitalization, less postoperative pain and etc [4]. In addition to the general benefits of endoscopic techniques, laparoscopic adhesions are less likely to develop than laparotomy [5]. Because surgical gas is not used, direct peritoneal damage is significantly reduced and peritoneal infiltration is minimized [6]. In spite of these advantages, there are potential limitations: the field of view may be low, Small size of tools, and etc. In many cases, despite the short stay in the hospital, the cost of hospitalization increases because more time is spent in the surgery room and more expensive surgeries are used [7]. In some patients, the risk of complications increases, which can be attributed to inherent laparoscopic constraints, surgeon's skill levels, or both. However, by combining abilities, skills, and experience, the duration of the operation and the complications of the procedure are comparable to those of the traditional abdominal surgery [8]. In this study, we decided to compare the pain after laparoscopic surgery in two different intracranial pressures.

Materials and Methods

This is randomized double-blind clinical trial study. This study was conducted on women who referred to gynecology department for gynecological surgery. Patients with a lack of consent to enter the study, history of infection Cardiac failure, renal, pulmonary, liver, surgical history and adhesion of the site of surgery, and history of the use of analgesics during the pre-operative period were excluded. Patients were randomly devided into two groups: In the case of intra-abdominal pressure during laparoscopy, group A, 40 patients with 12-mmhg and group B, 44 patients in the 15-mmhg. Surgery method, surgeon and anesthetic method were the same for all patients. After general anesthesia, in each of the 2 groups, we entered the needle through the navel and the CO2 gas flowed at a rate of 1L / MIN until the abdominal pressure reached to 12 or 15 mmhg, and then these pressures was automatically maintained during surgery. Patients were in the trendelenburg position. Then, we used three ports, one port (10mm, through the navel) and two ports (5mm, through suprapubic and left side on abdomen). All parameters (age, Gravity, Parity, BMI, history of previous disease, duration of surgery and hospitalization) were recorded during the study. The frequency of Postoperative pain was assessed in 6-12 hours after surgery by VAS scores. The rate of receiving analgesic drugs was recorded. In both groups, severe nausea, the need to anti-nausea drug after surgery, and vomiting was also recorded. Finally, the collected data were analyzed using SPSS 17 and the related tests.

Results

In this study, 84 patients were evaluated. The mean age in the group A was 30.8 ± 1.29 years and the mean age in the group B was 34.2 ± 1.15 years. There was no significant difference between two groups in term of age (P-value = 0.056), the history of the disease (P-value = 0.24), frequency distribution of surgical type (P-value = 0.25), and duration of hospitalization (P-value = 0.84). The results of the study on the distribution of frequency of variables such as shoulder pain, the amount of received analgesic drug in 6 and 12 hours after surgery, nausea, vomiting and anti-nausea drug after laparoscopic surgery in two groups, was summarised in table 1. The analysis of data by chi-square test showed that there is a significant difference between the distribution of the frequency of received analgesic drug in 12 hours after laparoscopic surgery in two groups (P-value <0.05). The duration of surgery and hemoglobin levels before and after laparoscopic surgery in the two groups is presented in Table 2. The results showed that there was no significant difference between the mean duration of surgery and hemoglobin levels before and after laparoscopic surgery (P value> 0.5). The results of mean scores of abdominal pain after surgery at 6 and 12 hours after laparoscopic surgery were presented in Table 3. It was shown that there was no significant difference between the scores of abdominal pain after surgery at 6 hours and 12 hours after laparoscopic surgery in two groups (P value> 0.5).

Table 1: Distribution of variables (shoulder pain, analgesic drug in 6 and 12 hours after laparoscopic surgery, nausea, vomiting, and Anti-nausea) after laparoscopic surgery in two groups

Variables		Frequency (%)		P-value
		A	B	
Shoulder pain	Yes	13 32.5%	22 50%	0.1
	NO	27 67.5%	22 50%	
analgesic drug in 6 hours after laparoscopic surgery	Yes	37 92.5%	39 88.6%	0.71
	NO	3 7.5%	5 11.4%	
analgesic drug in 12 hours after laparoscopic surgery	Yes	19 47.5%	31 70.5%	0.03
	NO	21 52.5%	13 29.5%	
Nausea	Yes	23 57.5%	28 63.3%	0.56
	NO	17 42.5%	16 36.4%	
Vomiting	Yes	14 35%	14 31.8%	0.75
	No	26 65%	30 68.2%	
Anti-nausea	Yes	14 35%	15 34.1%	0.93
	No	26 65%	29 65.9%	

Table 2: The mean of surgical duration and hemoglobin levels before and after laparoscopic surgery in two groups

Variables	Frequency (%)		P-value
	A	B	
surgical duration	3.2±91.5	3.02±94.4	0.5
hemoglobin levels before laparoscopic surgery	0.15±12.1	0.18±12.37	0.26
hemoglobin levels after laparoscopic surgery	0.17±11.34	0.28±11.37	0.26

Table 3: The mean scores of abdominal pain at 6 and 12 hours

after laparoscopic surgery in two groups

Variables	Frequency (%)		P-value
	A	B	
6 hours after laparoscopic surgery	1.7±5.45	1.6±5.9	0.18
12 hours after laparoscopic surgery	1.6±2.1	1.5±2.29	0.5

Discussion

The aim of this study was to compare the pain level after laparoscopic surgery in two different intravaginal pressure. The results of this study showed that among 84 women, in group A, the mean age was 30.87 ± 1.29 and the mean age of group B was 34.22 1.15 which is not statistically significant similar to other studies [9]. There was no significant difference between the two groups in term of previous history of the disease and the type of surgery. The mean scores of postoperative pain in the first 6 hours in group A and B were 5.45 ± 1.7 and 5.45 ± 1.7, respectively which was not statistically significant. The result of our study was confirmed by Bogani et al. [10] However, Yasir et al study was not consistent with our study [11]. The mean scores of postoperative pain in the first 12 hours in group A and B were 1.6 ± 2.1 and 2.2 ± 1.5, respectively which was not statistically significant. The study of Bogani was consistent with the results of our study [10], but the Yasir study was not consistent [11]. There is no significant difference between the distribution of the frequency of received analgesic drug in 6 hours after laparoscopic surgery but significant in 6 hours after laparoscopic surgery in two groups. Our study results have been confirmed in Yasir et al. [11]. The postoperative complications was studied in both groups. unlike to other studies, there is no significant difference between two groups in term of post operative shoulder pain [11, 12]. There was no significant statistical relationship between other variables (nausea, vomiting, anti-nausea and hemoglobin) in post-operative pain in the two groups The similar results was obtainde in Bogani et al. study [10]. In terms of the duration of operation, both groups have simuilar time without statistically significant difference. These data were compatible with several studies, such as Bogani et al study [11, 12] and ucompatible with other studies such as Guzel et al. study [9]. The duration of hospitalization was not significant between two groups consistent with other similar studies [9, 10]. The results of the Yasir was different [11].

Conclusion

According to the results of the study, it can be concluded that in different intra-abdominal pressures, the amount of pain after laparoscopic surgery is not statistically significant.

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