

**PAIN AFTER LAPAROSCOPIC AND VAGINAL HYSTERECTOMY IN MORBIDLY  
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**ABSTRACT**

**Introduction:** Hysterectomy is the second most common gynecological operation after Caesarian section worldwide, with up to 600. 000 performed in the US per year.<sup>[1]</sup> There are three main surgical techniques of hysterectomy - traditional open, vaginal and laparoscopic. Since the implementation of mini-invasive methods of hysterectomy, many researches have proved advantages of vaginal and laparoscopic techniques to traditional open surgery.<sup>[2,3,4,5]</sup> However, comparison of laparoscopic and vaginal methods, their post-surgical rehabilitation process and quality of life are still subjects of interest. **Aim:** The aim of the study was to compare postoperative pain after laparoscopic hysterectomy (LH) and vaginal hysterectomy (VH) in morbidly obese patients (BMI  $\geq$  35kg/m<sup>2</sup>). **Methods:** For this purpose, a multi-center prospective research was conducted in patients with benign pathologies and uterine size up to 15 weeks of gestation, who underwent laparoscopic and vaginal hysterectomy. Patients operated with the diagnosis of uterine prolapse were excluded from the research. The study was conducted for the period of January 2014 – November 2017. Totally 68 patients were studied and divided into two groups: laparoscopic hysterectomy (LH, n=32) and vaginal hysterectomy (VH, n=36). In both groups were analyzed: 1) length and frequency of medication with narcotics post-surgically, in terms of equal dosage and similarity of drugs; 2) pain intensity in 24 hours from the surgery, by means of the questionnaires Visual Analogue Scale (VAS), which were filled by patients after written consent. In LH and VH groups 28 and 31 patient respectively filled the questionnaire. **Results:** 1. Patients after VH needed narcotics for pain relief much often, than after LH (61, 11% and 15,63% respectively) (P<0.05). 2. Average time of pain medication with narcotics was longer in vaginal hysterectomy group - 9.55h, compared to laparoscopic group - 6.5h (P=0.000). 3. VAS questionnaires in 24h after the surgery showed that, pain intensity was similar and did not give a statistical difference between the two methods (1.2 and 1.4 in LH and VH groups respectively) (P>0.05). **Conclusion:** According to the study, it may be concluded that in morbidly obese patients (BMI  $\geq$ 35 kg/m<sup>2</sup>) pain is more intense and lasts longer after vaginal hysterectomy, compared to laparoscopic hysterectomy. However, in 24 hours after the surgery pain is similar.

**KEYWORDS:** Postoperative pain, hysterectomy, total laparoscopic hysterectomy (TLH), vaginal hysterectomy (VH), Visual Analogue Scale (VAS).

**INTRODUCTION**

Hysterectomy is the second most common gynecological operation after Caesarian section worldwide, with up to 600. 000 performed in the US per year.<sup>[1]</sup> In 70% of the cases indications of the surgery are benign gynecological pathologies,<sup>[1]</sup> including fibromyoma, ovarian cyst, endometrial hyperplasia, uterine polyp, genital prolapse etc. Introduction of nonsurgical - conservative, less invasive techniques has reduced the rate of hysterectomy in recent years.<sup>[1,2]</sup>

There are three main surgical techniques of hysterectomy - traditional open, vaginal and laparoscopic. Since the implementation of mini-invasive methods of

hysterectomy, many researches have proved advantages of vaginal and laparoscopic techniques to traditional open surgery.<sup>[3,4,5]</sup> However, comparison of laparoscopic and vaginal methods, their post-surgical rehabilitation process and quality of life are still subjects of interest. In this concept, few researches have been done among morbidly obese patients. Surgery of such patients is technically complex and therefore, the risks of complications are increased.<sup>[6,7,8,9,10]</sup> Unfortunately, the rate of the mini-invasive hysterectomy techniques in such patients is low; i.e. higher the BMI, more frequent the abdominal route of hysterectomy.<sup>[11,12]</sup>

In the recent years, post-surgical rehabilitation and quality of life has been a matter of interest and one of the main criteria in selection of surgical method. Post-surgical pain is the most common complaint after the intervention, influencing rehabilitation process of a patients and her return to a routine life style. Morbidly obese patients form a high risk group in terms of intra- and post-surgical complications and have longer rehabilitation period,<sup>[6,7,8,9,10]</sup> thus, such patients are a subject of high interest.

### AIM

The aim of the study was to compare postoperative pain after laparoscopic hysterectomy (LH) and vaginal hysterectomy (VH) in morbidly obese patients (BMI  $\geq$  35kg/m<sup>2</sup>).

### METHODS

For this purpose, a multi-center prospective research was conducted in patients with benign pathologies and uterine size up to 15 weeks of gestation (500gr), who underwent laparoscopic and vaginal hysterectomy. Patients operated with the diagnosis of uterine prolapse were excluded from the research. The study was conducted for the period of January 2014 – November 2017.

Totally 68 patients were studied and divided into two groups: Group A – patients after laparoscopic hysterectomy (LH, n=32) and Group B – vaginal hysterectomy (VH, n=36).

In both groups were analyzed:

- Age;
- BMI;
- Uterine size;
- Duration of surgical intervention;
- Length and frequency of medication with post-surgically, in terms of equal dosage and similarity of drugs;
- Pain intensity in 24 hours from the surgery, by means of the questionnaire Visual Analogue Scale (VAS), which were filled by patients after written consent of each of them. In LH group 28 patients out of 32 filled the questionnaire and in VH group 31 patients (out of 36).
- The data was analyzed in each group (LH and VH) and compared to each other using the statistical software SPSS version 20.0.

### RESULTS AND DISCUSSION

Patients' age in LH group was from 38 to 75 years, 53.66 in average (CI=50.35, 56, 96). In VH group age was between 40-69years, in average 54, 36 (CI=56.36, 57.36).

Uterine size in both study groups was up to 15 weeks: in LH group 7.97 in average (CI=6.73, 9.21), in VH group - 7.31 weeks (CI=6.8.61) (P>0.05).

In laparoscopic group (group A) BMI of 32 patients was 35-49 kg/m<sup>2</sup>, in average 36.97 (CI=36.11, 37.83), out of which 6 (18.7%) had BMI over 40 kg/m<sup>2</sup>. In vaginal group (group B), BMI of 36 patients ranged between 35-54 kg/m<sup>2</sup>, in average 38.78 (CI=37.3, 40.26); out of those, 14 patients (38,9%) had BMI over 40 kg/m<sup>2</sup>.

In each group, the surgical duration was calculated. In LH and VH groups it was 40-165min and 30-70 min respectively, in average 81.72 min and 40.14 min respectively (CI=71.88, 91.56; CI=36.87, 43.81) (P<0.001).

Thus, average age and uterine size of both study groups were statistically similar. However, average body mass index (BMI) was higher in VH group compared to LH group – 36.97 and 38.78 respectively (P=0.36 P<0.05).

As for surgical duration, length of vaginal hysterectomy was significantly shorter compared to laparoscopic hysterectomy - in average 81.72 min and 40.14 min respectively (P<0.001).

Post-surgically, in group A (LH) 5 patients (15.63%) were given narcotics for pain relief, in group B (VH) – 22 patients (61.11%). Thus, absolute majority of patients after VH needed narcotics - 61, 11%, while only 15,63% after LH (P<0.05).

In LH group, average use of narcotic drugs was 6.5h (SD=1.21, CI=8.73, 10.36), while in VH group it was much longer – 9.55h (SD=1.05, CI=5.4, 7.6) (P=0.000).

In 24 hours post-surgically, 28 patients in LH group and 31 patients in VH group filled the questionnaires - Visual Analogue Scale (VAS) – evaluating pain intensity by a 10-point scale. According to the results, in two groups, pain intensity was similar with no statistical difference – 1.2 after laparoscopic hysterectomy and 1.4 after vaginal hysterectomy (P>0.05).

As a result of the study

1. Patients after VH needed narcotics for pain relief much often, than after LH (61,11% and 15,63% respectively) (P<0.05).
2. Average time of pain medication with narcotics was longer in vaginal hysterectomy group - 9.55h, compared to LH group - 6.5h (P=0.000). Thus, in vaginal hysterectomy patients narcotics were used more frequent and for longer period of time compared to laparoscopic hysterectomy.
3. VAS questionnaire (patients' self-assessment of pain) in 24h after the surgery showed that, pain intensity was similar and did not give a statistical difference between the two methods (1.2 and 1.4 in LH and VH groups respectively. P>0.05).

## CONCLUSION

According to the study, it may be concluded that in morbidly obese patients (BMI  $\geq 35$  kg/m<sup>2</sup>) pain is more intense and lasts longer after vaginal hysterectomy, compared to laparoscopic hysterectomy. However, in 24 hours after the intervention pain is similar.

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