provided by them and the similar kind of compliance, obviously, can be called "declared compliance." The survey was conducted by questionnaire observation program HA2011-01RU, Soprano.

The survey of 469 patients was carried out as a result. 258 patients (55.01%) implemented fully the medical recommendations, from which the patients having taken anticoagulants according to Scheme 1 were 10 people, 28 people followed Scheme 2, 220 followed Scheme 3. 22 (4.69%) patients breached a drug receiving as a single pass, 12 (2.55%) patients replaced a product to other anticoagulants. However, these violations, in our opinion, could not significantly influence the development of thromboembolic complications, so this group of patients was assigned to the category of "conditional compliance." 58 (12.36%) patients completely ignored the medical advice that manifested in refusal to accept not only the anticoagulant, but other drugs. 13 (2.77%) patients randomly replaced it with a drug with different mechanism of action (antiplatelet agents), as well as taking medication not in the recommended doses. 72 (15.35%) patients did not undergo or underwent coagulation control only once. Exceeding of a recommended dose is not ascertained. Also social factors have made their contribution to the structure of noncompliance. So 25 surveyed did not take recommended oral anticoagulants due to the absence of the drug in pharmacies, and 7 patients for the same reasons were forced, instead of an oral anticoagulant, to take its cheaper analogue because of the high cost of the drug.

According to the study, compliant are those patients who were assigned a parenteral and oral LMWH anticoagulant as monotherapy. Noncompliant are those patients who were recommended to take indirect anticoagulants. To these patients the recommendations to control coagulation were given, but this procedure was performed with 21 patients (once), the remaining patients either did not attend the clinic (13 patients) or in MPIs this procedure is not performed or they were not sent to specialists to whom they had addressed (8 patients).

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THE EFFECTIVENESS OF SELF-LOCKING SUTURES IN LAPAROSCOPIC MYOMECTOMY

ABSTRACT

The authors present a comparative analysis of the efficiency of laparoscopic myomectomy (LM) with bed unit closure with individual sutures and a monofilament self-locking barbed suture.

It was found that the use of knotless suture at LM helps to reduce the duration of closure of the myometrium defect, intraoperative blood loss, general surgical risks and the complexity of the intervention, the formation of a wealthy uterine scar due to full recovery of its anatomy. Statistically significant differences in the duration of operations, hospitalization periods, hemoglobin levels and postoperative complications were not observed.

Keywords: laparoscopic myomectomy, barbed suture V- lock, duration of suturing the myometrium defect.

The priority of organ-saving technology in uterine fibroids treatment (UF) is connected with the rejuvenation of women who are interested in their reproductive function in the presence of this disease. The need to improve aspects of choosing various technologies of reconstructive plastic surgeries is determined by symptoms, size and location of the tumour and the number of fibroids [2,7].

Despite obvious advantages of laparoscopic myomectomy (LSM), widespread use of this method has contributed not only to the fibroids removal, but also triggered a debate about the viability of scars on the uterus. The cases of uterine rupture at the scar during parturition favoured the study of risks related to the adequacy of the technical restoration of uterine walls integrity during laparoscopy, as well as suture healing conditions.

Optimum regeneration of dissected tissues is determined by the conditions of blood supply, that means by the way of uterine wall defect restoration and the type of suture material. Taking into account the necessity to achieve complementary hemostasis, especially

for large-sized fibroids, which in its turn affects the duration of the intervention, the possibility of endo-suture imposing is discussed, being a method of suturing the defect myometrium, contributing to the formation of solid scar on the uterus and the reduction of the risk of histopathic uterine rupture during pregnancy.

Discussions about the benefits of suture material and creating optimal conditions for full-fledged suture scarring in the uterus are still continued. It is believed that the braided thread of polyglycolic acid or polydioxanone, traditionally used in myomectomy, is associated with the risk of local ischemia and necrosis, the violation of suture remodeling processes because of uneven distribution of a tension gradient. The negative effects can be avoided by using alternative options – the V-lock system, which is an absorbable monofilament polydioxanone thread with a loop at the free end and unidirectional laser incisions along its entire length.

The strength of different types of threads differs very slightly, but pulling the braided thread through the tissues is more traumatic and can cause significant inflammatory reaction, compared to monofilament one. The knotless suture with a firmly fixed first stitch and the possibility to pull the thread freely through the tissue exclude excessive pulling of the units that can negatively affect the healing of the tissue when using individual and continuous sutures. The problem of effectiveness of using absorbable monofilament sutures due to the paucity of data encourages the analysis and comparison of high-tech and traditional techniques of intraoperative defect myometrium suturing.

The **objective** of the study is to compare the efficacy of suturing the bed of the node unit using V-lock system (self-locking monofilament thread) and individual sutures in laparoscopic myomectomy.

MATERIALS AND METHODS

To achieve the goal a prospective study was carried out, including 40 women with hysteromyoma who were examined at clinical bases of Obstetrics, Gynecology and Perinatology Department of the Kuban State Medical University in 2014 – 2015. The study was conducted on the basis of high-tech medical care and clinical testing of prevention, diagnosis, treatment and rehabilitation methods.

Depending on the way of the uterine wall closure during laparoscopic myomectomy 2 groups were formed among 40 women: in group I (n = 20) a monofilament synthetic thread of poliglecaprone (Monocryl Plus 0) was used by individual Z-shaped sutures; in group II (n = 20) a node-free uninterrupted suture was used with the thread with a serrated design and a fixing loop (V-lock 180 “0”).

Laparoscopic myomectomy (LSM) was performed traditionally, including the following steps: cutting serosa and myometrium above the node in its outermost part and possibly most distant from appendages and vascular bundles, husking myoma node without pseudocapsule by rigid fixation and tractions of the unit by 10mm bullet forceps with a following gradual “withdrawal” from the site of the myometrium. Further on, spot coagulation of bleeding vessels was carried out using bipolar coagulation, then postoperative defect suturing by sero-muscular sutures, gripping the bottom of the wound for the prevention of hematomas in the myometrium and the formation of a high-grade scar, with extracorporeal knot tying. The myoma node was removed from the abdomen by morcellation in an airtight container.

All women were examined in connection with infertility of various duration in accordance with generally accepted standards, significant deviations from the standard indicators haven’t been identified. The main criterion for inclusion in the study was the presence of individual subserous-interstitial myoma nodes ranging in size from 5 to 7 cm.

Exclusion criteria were chronic extragenital diseases in decompensation and acute stages, acute inflammatory diseases and cancer.

The duration of patients’ observation after the surgery was 12 months.

Statistical processing of the results was performed using the statistical software package Statistica v.6.0. and Microsoft Office Excel 2003. The program calculated the arithmetic mean M and standard error of the mean m. Student’s parametric test was used to assess statistically significant differences between the groups under consideration. Differences were accepted as statistically significant when $p < 0,05$.

RESULTS AND DISCUSSION

The operative time (the time spent directly on LSM) and the volume of intraoperative blood loss were assessed in the sample of patients with hysteromyoma (UF). The criteria for the effectiveness of organ-saving surgical treatment included the removal of the clinical symptoms of the disease (poly- and dysmenorrhea), the reduction in the amount (volume) of the uterus on the basis of gynecological research data and transvaginal ultrasound scan.

Comparability of the groups was emphasized by almost identical age of the patients (35,6 ± 1,8 and 33,8 ± 1,4 years old, respectively), as well as the duration of the fibroids presence (4,8 ± 1,5 and 4,3 ± 1,7 years). The comparative analysis of the effectiveness of various uterus integrity and recovery techniques in cases of LSM showed no statistically significant differences in the duration of the surgery in the following groups: in I – from 30 to 85 minutes, on average 68,5 ± 22,5, in II – from 30 to 65 minutes, on average 51,7 ± 14,4. Some of the differences in the time intervals can be explained by the need for additional coagulation and imposing additional sutures, especially at major nodes. The advantages of continuous knotless suture and surgical difficulties reduction are presented in the study by T. Song et al. (2015) [3]. However, the reduction of overall contact length during myomectomy was not observed in our case. It should be noted that in general, the number of women with node size up to 5 cm (32% and 40%) and larger (7.5 cm) (78.0% and 60.0%)

in the groups was not significantly different.

Average hemoglobin levels in the groups under study with some variants of suture material usage did not differ much (122,7 ± 5,6 g / L and 136.4 ± 8.3 g / L respectively, p> 0,05).

Reducing the time, required for closing the uterine wall defect using a continuous knotless monofilament suture during LSM (10,9 ± 4,3 min. vs. 17,4 ± 3,8 min., p <0.05), being compared to individual joints using, proved the research of foreign colleagues. In the studies by A.R. Gargiulo et al. (2012) the advantages of V-lock suture were observed both in traditional and robotic myomectomy [6].

The reduction of intraoperative blood loss (56,4 ± 34,5 vs. 86,8 ± 56,3, p <0.05) was a distinctive feature of V-lock system in LSM.

Other kinds of research also report on the optimization of LSM technology when using knotless monofilament thread by reducing perioperative blood loss and the duration of the myometrium closure process [5]. It is believed that the closure of the surgical wound in the uterus using self-locking filaments with laser notches simplifies the surgeon's work in conditions of limited endo-manipulative activity, reduces stress and eliminates the need for a third assistant [1]. V-lock system notches being focused in one direction helps to put together the wound edges anatomically, facilitates reliable hemostasis in the wound by a light pull of the thread through the myometrium. Monofilament thread reduces the chance of developing an inflammatory process in the wound, promotes optimal vascularization and healing while minimizing complications which are often observed when using individual sutures – poor or excessive thread pulling and loosening, negatively affecting the quality of the scar formation on the uterus.

The absence of the need in laparotomy, blood transfusions or sonographic signs of postoperative scar inviability indicates efficacy and safety in all cases of V-lock system using during LSM. A similar opinion is shared by other authors [4]. However, they deny the connection between the type of suture material and the frequency of complications.

CONCLUSION

Our research allows denying the significant impact of different types of suture material in the early and late postoperative periods, terms of rehabilitation and recovery after laparoscopic myomectomy. The advantages of V-lock system should also be noted. It has physical and biological properties required for a full restoration of the anatomy of the uterus compared to conventional sutures: simple overlay, putting the edges of the wound matched without the need of constant pull, absence of necessity for knotting and the so-called "third hand". LSM with continuous knotless monofilament suture helped to reduce the chance of intra - and postoperative complications, medicamental burden (including the duration of anesthesia) and shortened hospital stay and rehabilitation period.

The formation of a solid uterine scar with preservation of tissue architectonics, which is extremely significant for patients who are interested in their reproductive function, proves the effectiveness of high-tech innovations when mastering the appropriate skills to use them.

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