## THE NEW APPROACH TO THE TREATMENT OF POSTOPERATIVE VENTRAL HERNIAS

A.M. Kodirova, I.O. Kalyakanova, Z.S. Kaitova
Scientific advisor: Professor, A.V. Protasov, MD, PhD
RUDN University, Russia, Moscow, Miklukho-Maklaya str. 8, 117198
E-mail: k.aziza96@bk.ru

## НОВЫЙ МЕТОД ЛЕЧЕНИЯ ПОСЛЕОПЕРАЦИОННЫХ ВЕНТРАЛЬНЫХ ГРЫЖ

А.М. Кодирова, И.О. Каляканова, З.С. Каитова
Научный руководитель: д.м.н., профессор А.В. Протасов
РУДН, Россия, г. Москва, ул. Миклухо-Маклая 8, 117198
E-mail: k.aziza96@bk.ru

***Аннотация.*** *После лапаротомий самым частым осложнением в отдаленный период являются послеоперационные вентральные грыжи. Нами был проведен сравнительный анализ лечения 66 пациентов с послеоперационными вентральными грыжами в период с января 2010 по декабрь 2016 года. Для закрытия грыжевого дефекта был выбран современный самофиксирующийся имплантат Progrip™.*

**Introduction.** The biomaterials for prosthetics for the first time began to be used in hernia. Of particular interest are studies on the use of modern materials for hernioplasty such as polypropylene (PPL) and polytetrafluoroethylene (PTFE) [1]. Although the use of mesh implants also reduced the risk of recurrence of hernias, however, every third patient reverts for surgical care [2]. It was proved that through the cellular structure the connective tissue sprouts faster, forming the framework of the anterior abdominal wall. The physical properties of the prosthesis (size, shape of the pores, specific gravity, density and structure) and the characteristics of the human body affect the duration and quality of the ingrowth of the prosthesis in surrounding tissues [3, 4]. The formed carcass, consisting of an implant and connective tissue, should provide strength and elasticity of the anterior abdominal wall. The most important is biocompatibility, that is, the implant should not cause allergic reactions, sensitization, inflammation and rejection [5-7]. Studies of implants from PTFE and PPL showed that a connective tissue capsule forms around the implants, creating a coarse scar with an incomplete implantation of the implant. The processes of material degradation cause the loss of physical properties of the prosthesis. Reduction of the prosthesis occurs up to 50% of the original size, which can lead to recurrence of hernia [6, 8, 9, 10]. Later, composite mesh implants appeared, where two-component materials with a hydrolyzing component and a reduced amount of polypropylene, Teflon or titanium content were used [11]. Composite implants also include self-locking mesh prostheses. The mesh prosthesis is fixed to the tissues with the help of glue coatings or with the help of micro-hooks that dissolve within a certain time [12]. Good results were obtained with the use of Covidien Progrip implant [4, 13, 14, 15]. Thus, the purpose of our research was to determine the effectiveness of the self-locking Progrip™ implant.

**Materials and methods.** The study included 66 patients operated on for postoperative ventral hernia. The first group of patients was made up to 60 years of age, the second group - older than 60 years (see Table 1). In each group, patients were operated with a ProgripTM self-locking implant of the standard form (subgroup B) and a

modeled implant (subgroup A). The implant model was developed by Professor Protasov A.V. (2013). This modification allows you to translate the direction of the action of tensile forces from the transverse to longitudinal, thus strengthening the strength characteristics of the implant.

*Table 1*

*Patient distribution by groups*

| | Group I | Group II | Total |
|---|---|---|---|
| Modeled implant | 14 | 17 | 31 |
| Standard implant | 18 | 17 | 35 |
| Total | 32 | 34 | 66 |

According to the classification of Chevrel J.P. and Rath A.M. from 1999, the study included patients $S_mW_{1-4}R_{0-2}$, where "$S_m$" means median localization, patients with mixed and lateral defect localization were excluded. The width of the hernia defect - "W" and the number of relapses - "R" did not matter when selecting patients. The width of the hernia gates varied from 4 to 25 cm. The number of patients with the sizes of hernial gates $W_3$ (10-15 cm) - 23 people (34.8%). In terms of the number of relapses, patients both previously unoperated and postoperative surgical interventions for postoperative hernia were met. Recurrent hernias were diagnosed in 21 (31.8%), in the remaining cases, hernioplasty was performed for the first time. The period of patients' recourse from the time of hernia defect appearance ranged from 6 months to 10 years. During the first year, only 23 people applied for help (34.8%), which once again confirms the medical illiteracy of patients and careless treatment of their health. The volume of examinations in the preoperative period corresponded to all the requirements of training in view of chronic diseases. In the postoperative period, all patients received analgesia according to the standard scheme. If necessary, antibiotic therapy and prevention of thromboembolic complications were prescribed. The tactic of early activation of patients with the wearing of a bandage was used.

**Results**. The duration of surgery depends on the size of the hernia defect, and does not depend on the age of the patients being operated. With a hernial defect up to 10 cm, the duration of the operative intervention was 69.4 ± 6.1 minutes. In patients with a hernial portal more than 10 cm the operation time increased to 96.1 ± 11.4 minutes. Suppuration of a postoperative wound in a patient with a history of secondary wound healing after the primary operation was revealed, despite the antibiotic therapy started and the daily wound dressings. Complications associated with the formation of gray and suppurative hematomas were also conservatively resolved, no additional surgery was required. In the late postoperative period, the observation period for patients was 2 to 8 years. Relapse of the disease was recorded in 6 (9.1%) patients. Relapse with the simulated implant occurred only in one patient - group I. The reason for the relapse is the failure of clinical recommendations after the operation. In the remaining 5 (7.5%) cases, reliable data on the cause of relapse was not obtained. Despite the scope of the surveys, it was not possible to completely avoid the complications of chronic diseases. One patient suffered from deep vein thrombosis.

**Conclusions**. It is necessary to conduct sanitation and educational work among the population at the level of the primary polyclinic link to prevent recurrence of postoperative ventral hernias. The simulated implant shows the

best results of treatment of ventral hernias. It is possible to introduce this method into practical surgery in patients with postoperative ventral hernias of the median localization.

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