

УДК: 616.12-005.4-06:616.89-008.45

RESULTS OF MORPHOLOGICAL STUDIES (Experimental studies)

Khamdamov I.B.

Bukhara State Medical Institute named after Abu Ali Ibn Sino. Republic of
Uzbekistan.

ABSTRACT

Despite the emergence of new technologies in herniology, the problem of choosing a method and material for fixing meshprostheses remains unresolved and requires the search for new approaches to solve this problem.

Keywords: *hernia, hernioplasty, mesh, abdominal wall reconstruction, women of childbearing age.*

АННОТАЦИЯ

Несмотря на появление новых технологий в Герниологии, проблема выбора способа и материала для крепления мешипротеров остается нерешенным и требует поиска новых подходов для решения этой проблемы.

Ключевые слова: *грыжи, герниопластика, сетка, реконструкция стенок брюшной полости, женщины детородного возраста.*

INTRODUCTION

The analysis of the literature devoted to the problems of hernioplasty still indicates a high percentage of various complications of hernia treatment, indicating the low effectiveness of the proposed methods of their prevention and insufficient attention of surgeons to many of these complications [1,2,5]. Ventral hernias not only bring aesthetic discomfort, but also reduce the quality of life, limiting the functionality of women. The wide prevalence of hernias among people of working age determines the high social and economic significance of this problem. The development of herniology follows the path of increasing the reliability of the applied methods of hernoplasty while reducing the traumatic nature of the techniques [2,3,6].

In one of the studies conducted in Europe, an increase in infectious wound complications was revealed after the routine use of chlorhexidine bigluconate as a local antiseptic in preparation for surgery of the surgical field. Researchers suggest that the antiseptic destroys the microbiome formed on the skin and leads to excessive growth of flora insensitive to it, including nosocomial [1,2,3,7]. The choice of the hernioplasty method is within the competence of the operating surgeon. However,

each surgeon relies on data from domestic and foreign studies, which greatly simplify this choice [1,2,3,9]. One of the latest such sources is the recommendations of the European Society of Herniologists from 2016 [2,4,8]. But, in some cases, this choice is, unfortunately, empirical in nature and is based not so much on objective criteria as on the personal preferences of the surgeon. This problem is especially important at the stage of mastering new techniques, when technologies are not yet perfect. In these conditions, a very relevant, from our point of view, is a comprehensive comprehensive analysis of the results of treatment using new and traditional methods, which allows you to find both positive and negative sides of a particular method, and determining the place of a new method in a particular section of surgery.

The aim of the study is to improve the results of surgical treatment of women of fertile age with hernias of the anterior abdominal wall by substantiating a differentiated approach to the choice of the method of allogernioplasty.

MATERIAL AND METHODS OF RESEARCH.

Within the framework of the experimental section, the work was carried out in two directions: 1. Development of a method aimed at the ability to regulate the degree of formation of connective tissue in the area of the wound barrier using the preparation of carboxymethylcellulose. The experiment was performed on rats that had a mesh explant on the fascia of the back muscles, treated with Mesogel and Iodopyron in the main group and with Iodopyron in the control group. As a result, within 15, 30 days, in accordance with the Convention for the Protection of Animals (Strasbourg, 1986), animals were removed from the experiment by overdosing with a 20% solution of the anesthetic "Xila". The mesh explant was evaluated macroscopically, tensometrically, then the section of the explant with surrounding muscle-aponeurotic tissues was excised for histological examination. The study used hematoxylin - eosin staining to assess the presence of fibroblasts, fibrous structures and collagen. Macroscopically and microscopically, a decrease in the density of the connective tissue formed around the explant filaments in the main group was revealed. It was found that in the control group of rats operated with a mesh prosthesis and iodopyron, two weeks after implantation, a proliferative reaction was observed with a large number of fibroblasts located between rare thin collagen fibers and, especially often, at the border with the endoprosthesis. Each thread of the endoprosthesis was surrounded by a forming ring-shaped capsule of young connective tissue with young fibroblasts with an abundant amount of collagen fibers. There was also abundant formation of the vascular network in the area of

proliferation of young connective tissue. Macroscopically, the explant is roughly spliced with the underlying fascia, it does not separate from the latter when stretched. On a series of preparations taken one month after implantation in the same group, the polypropylene mesh prosthesis is also surrounded by collagen fibers forming a capsule, however, the thickness of the proliferative layer has somewhat decreased, and the collagen fibers are not randomly arranged, which indicates their maturity. Collagen bundles of mature connective tissue are numerous and isolate the foreign body of the endoprosthesis in the form of a capsule. Fibroblasts in the capsule become narrow and intensively stained with hematoxylin, which indicates their greater maturity. The tissues around the endoprosthesis are not changed. In the second group of rats operated with a mesh prosthesis with iodopyron, two weeks after implantation, the formation of loose, sometimes denser connective tissue was observed, fibroblasts and collagen fibers of which entwine the filaments of the mesh. Around the individual threads of the endoprosthesis, the formation of collagen fibers is delayed compared to the control group. There are rare concentric located collagen fibers that form a thinner capsule. At the same time, in the wound, the mesh prosthesis is soldered to the surrounding tissues by rare single adhesions and is more mobile, clearly differentiated in the tissues.

On a series of drugs taken one month after implantation, the differences with the control group consisted in the severity of the connective tissue capsule around the fibers of the mesh explant. The polypropylene mesh prosthesis is also surrounded by a dense capsule, but it was already represented by mature connective tissue. The capsule is thinner in comparison with the similar control group (3,2-0,8 times, $p < 0,05$). The collagen bundles of mature connective tissue are longitudinally located, and the fibroblasts between them are narrow and small, intensively stained with hematoxylin, which indicates their greater maturity. The tissues around the endoprosthesis are not changed.

In the control group of laboratory animals, four cases (27%) of wound infection and animal death were observed. There were no wound complications in the main group. Thus, the conducted experimental studies allowed us to learn more about the course of the wound process during implantation of a polypropylene mesh endoprosthesis with Iodopiron preparations.

CONCLUSIONS

1. The data obtained indicate that it is possible to effectively influence the formation and maturation of connective tissue in the wound by forming a

biodegradable mesogel case, thereby preventing deformation of the mesh endoprosthesis and anatomical structures of the surgery area with fibrous tissue.

2. The use of iodopyron for the treatment of a mesh polypropylene prosthesis at the stage of its implantation provides effective prevention of infectious complications from the wound. These results served as the basis for the use of the drug in the clinic.

REFERENCES

1. Belokonev V.I., Fedorina T.A., Kovaleva Z.V. et al. Pathogenesis and surgical treatment of postoperative ventral hernias // Samara: GP "Perspektiva", 2005. P. 208.
2. Kulikovskiy V.F., Vitinskaya E.P., Soloshenko A.B. Analysis of the immediate results of treatment of patients with prosthetic plastic using mesh endoprostheses with a nanosized diamond-like carbon coating // Fundamental research. - 2014.-№4.-P. 91-95.
3. Kulikovskiy V.F., Dolzhikov A.A., Bitenskaya E.P. et al. Systemic inflammatory response during implantation of mesh prostheses with carbon coating // Materials of the X conference "Actual problems of herniology." - Moscow, 2013. - P. 77-78.
4. Titova E. V. Study of the results of treatment of patients after xenoplasty of ventral hernias // Collection of materials of scientific and practical conference of young scientists in the framework of the first All-Russia. weeks of science with international participation. - Saratov, 2012. -P. 94-95.
5. Khamdamova M. T. Ultrasound assessment of changes in the endometrium of the uterus in women of the first and second period of middle age when using intrauterine and oral contraceptives // Journal of biomedicine and practice special issue-2. Tashkent-2020 issn 2181-9300 doi journal 10.26739/2181-9300
6. Khamdamova M.T., Rabiev S.N. Somatometric characteristics of pregnant women with different body types // Europe's Journal of Psychology (EJOP), 2021, Vol. 17(3), P.215-220.
7. Khamdamova M. T. Age echographic characteristics of the uterus and ovaries in women of the first and second period of middle age // Biology and integrative medicine. ISSN 2181-8827 2020. №2 –March- April(42).-P.75-86.
8. Khamdamova M. T. Age and individual variability of the shape and size of the uterus according to morphological and ultrasound studies // Problems of biology and medicine. – 2020. – №. 1. – C. 116.
9. Khamdamova M. T., Tukhtasinovna K. M. Echographic features variability in the size and shape of the uterus and ovaries in women of the second period of adulthood using various contraceptives // Asian Journal of Multidimensional Research (AJMR). – 2020. – T. 9. – №. 5. – C. 259-263.