



Advantages Of Laparoscopic Hernioplasty in Obesity Women of Fertile Age

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ABSTRACT

In the traditional treatment of external abdominal hernias in women of fertile age in the early postoperative period, the frequency of surgical complications was 13.4%; in the long-term period, 8.5% of patients had a recurrence of the hernia. A critical analysis revealed that the unsatisfactory results were due to the shortcomings of tactical approaches in the ability to perform alloplasty in women of reproductive age.

Keywords:

Woman, reproductive age, hernioplasty.

Relevance. External abdominal hernias are one of the most common surgical diseases. The incidence increases from year to year, remaining consistently high, and amounts to 14 patients per 1000 population aged 25 to 34 years; gradually increasing, it reaches 53 per 1000 population aged 55 to 64 years [1,4,8,9,10,11,25,26].

The history of herniology spans more than a century. The earliest reference to hernia as "...a tumor-like mass appearing on the surface of the abdomen as a result of coughing or straining" was found in the Ebers Papyrus, written around 1552 BC. The first attempt at surgical treatment of inguinal hernias was performed by C. Celsus (25 BC - 40 AD). He cut the pinching ring and pushed the contents of the hernial sac into the abdominal cavity [2,5,12,13,14,15,16,17].

The modern history of hernia surgery begins in the second half of the 19th century. and is associated with the name of E. Bassini (1844-1924), who created a unified concept for the treatment of hernias. The success of hernia treatment consisted in the surgical restoration of the normal relationships of the anatomical structures in the area of the hernial protrusion. This was a revolutionary step not only in

herniology, but also in the development of surgery in general. E. Bassini considered the disadvantage of the proposed methods to be that when suturing the tissues, their tension occurs and this contributes to the cutting of the sutures, which subsequently causes a recurrence of the hernia. The answer to this question was given by T. Billroth (1829-194), who said "... If it were possible to create artificial tissue in density that would not be inferior to the aponeurosis, the issue of radical treatment of hernias would be resolved." This phrase laid the foundation for allohernioplasty. Only more than 100 years later, in 1949 in France, D. Acquaviva first used synthetic nylon mesh in clinical practice. 10 years later in the USA, P. Usher used synthetic marlex mesh made from polyethylene. In the early 70s of the 20th century, I. Lichtenstein proposed a polypropylene mesh prosthesis for inguinal hernias, performing true tension-free repair [1,6,7,18,19,20].

The total number of surgical interventions in the world for abdominal hernias exceeds 20 million. The prevalence of the disease in Uzbekistan is 1.8% among the population. Among all abdominal hernias, inguinal hernias occupy a

leading place - 75% of all hernias [8,21,22,23,24,27]. However, the true prevalence of hernias is an unknown quantity. For example, when examining men in Jerusalem, 18 patients with inguinal hernia were identified per 100 people under the age of 25 years, and 47 over the age of 75 years. Among the population of Ghana, the incidence of hernias of the anterior abdominal wall is 3.15%. In Nigeria, umbilical hernia was diagnosed in 102 (1.3%) of 7968 children. In the Russian Federation, in the Voronezh region, 83.5% of the residents of one of the districts were examined. In a population of 36,181 people, 672 (2.18%) patients with various hernias of the anterior abdominal wall were identified. The frequency of surgical interventions in different countries varies within different limits. For example, in the USA this is 28 operations per 100,000 population, and in England - 10 per 100,000 [1,28,29,30].

Currently, herniology is one of the most rapidly developing areas of surgery, including in Uzbekistan. New technologies in the diagnosis and treatment of this pathology are being developed and widely introduced into clinical practice; many conferences and master classes are held annually on the problem of hernia surgery. At the same time, allohernioplasty has become a routine operation that is performed in almost any medical institution. The period of appearance of the first allomaterials gave way to a period of searching for the most optimal materials for this intervention, which would be made of biologically compatible material, non-toxic, would have a biologically non-degradable property during the entire time of presence in the body, and would retain the flexibility and plasticity of tissues.

As a result of current research, the most commonly used types of allografts are: polypropylene meshes; composite or combined allomaterials; film-porous endoprotheses - PTFE (polytetrafluoroethylene); polyvinylidene fluoride (PVDF) allomaterials [1,28,29,30].

Despite the successes, a certain group of people remains beyond these achievements. These are women of reproductive age for whom, due to the low extensibility of alloprostheses, allohernioplasty is a contraindication. The

emergence of new materials that have sufficiently high strength, biocompatibility and biodegradation opens up new opportunities for the use of alloprostheses in women of fertile age. The presented data indicate the feasibility of conducting studies devoted to a more in-depth and detailed study of the effect of allohernioplasty on processes in the tissues of the anterior abdominal wall with different approaches to allohernioplasty and the degree of change in its strength, which would reduce the number of early and late postoperative complications.

Considering the above, the **purpose** of this study was 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 allohernioplasty method.

Materials and methods. At the first stage, a retrospective assessment of the results of traditional treatment of patients with external abdominal hernias, who underwent tension hernioplasty as planned, was carried out. The solution to the problem of unsatisfactory results of treatment of tension hernioplasty is to use allomaterial to close the hernial orifice. However, to this day the limits of the possibility of using alloplasty in women of fertile age who are planning a pregnancy have not been determined. This research work was planned to address this issue.

At the second stage, experimental studies were conducted to substantiate the feasibility of performing alloplasty for patients of reproductive age planning to have children. An experimental model of "pregnancy" in experimental animals was developed. Based on the developed model, studies were carried out to determine the extensibility of the tissues of the anterior abdominal wall at certain times using different allomaterials. The experimental studies carried out made it possible to develop an optimal scheme for choosing the method of hernioplasty for anterior abdominal hernias in women of fertile age.

At the third stage, the collection of clinical material from the main group was carried out and a comparative assessment of the results

obtained with the data of the control group was carried out. Patients with strangulated hernias were not included in the analyzed material of both clinical groups. It should be noted that all patients, within a period of 1.5 to 5 years after undergoing surgery for a hernia of the anterior abdominal wall, became pregnant and in all cases the process ended in childbirth.

The results of surgical treatment of 82 patients with hernias of the anterior abdominal wall who were hospitalized for the period from 2013 to 2016 were analyzed. Of these, 42 patients were in the 1st surgical department of the Bukhara Regional Multidisciplinary Medical Center and 40 in the department of thoracoabdominal surgery of the multidisciplinary clinic of the Tashkent Medical Academy.

All patients were operated on as planned. When starting to analyze the surgical treatment of external abdominal hernias, we were guided by such criteria as the frequency and severity of postoperative complications, the dynamics of changes in clinical and laboratory parameters.

The clinical picture of the disease in all observations was characterized by the presence of hernial protrusion; 12 (14.1%) patients had various dyspeptic symptoms. The general condition in all cases was assessed as satisfactory, body temperature did not exceed normal values, and no hemodynamic or respiratory changes were noted.

When assessing the local status, all patients had a positive "cough impulse" symptom. The size of the hernial orifice ranged from 2 to 10 cm. The average size of the hernial orifice was 4.5 ± 1.7 cm. In 80 (97.6%) patients, the hernia was unilocular. Only in 2 (2.4%) cases, patients with postoperative hernias had two chambers measuring up to 5.0 cm.

Average laboratory test results were within normal limits. Blood leukocyte counts ranged from 5.3 to $10.4 \cdot 10^9/l$ (average $6.3 \pm 1.3 \cdot 10^9/l$); ESR – from 5.5 to 13.4 mm/h (10.1 ± 1.3 mm/h); hemoglobin – from 87 to 115 g/l (104.7 ± 8.7 g/l). In biochemical blood tests, ALT values ranged from 0.44 to 0.78 $\mu\text{mol/l}$ (0.68 ± 0.16 $\mu\text{mol/l}$), AST - from 0.48 to 0.84 $\mu\text{mol/l}$ (0.67 ± 0.18 $\mu\text{mol/l}$), bilirubin – from 10.0 to 20.5 mmol/l

(15.2 ± 2.1 mmol/l), total protein – from 59.5 to 75.0 g/l ($64, 2 \pm 4.2$ g/l).

Of the 52 (63.4%) patients with inguinal hernias, in 50 (61.0%) cases, hernia repair was performed according to Girard-Spasokukotsky with Kimbarovsky sutures on one side, in 2 (2.4%) patients the operation was performed on both sides. Of 17 (20.7%) women with umbilical hernias, 14 (17.0%) cases underwent hernia repair with Sapezhko plastic surgery, and 3 (3.7%) cases underwent Mayo plastic surgery. Of the total number of patients with umbilical hernias, 2 (2.4%) patients underwent simultaneous laparoscopic cholecystectomy, and 1 (1.3%) underwent laparoscopic cystectomy. 7 (8.5%) patients with hernias of the white line of the abdomen underwent hernial orifice plastic surgery according to Sapezhko. In 6 (7.3%) cases, patients with postoperative hernias underwent hernia repair with Voznesensky hernial orifice repair.

In the postoperative period, the indicators of the general blood test did not undergo any significant changes; during the observation period, no significant differences from the initial value were noted.

Pregnancy is a predisposing factor, and a gradual increase in intra-abdominal pressure contributes to the formation of hernias. Unfortunately, the inability to predict hernia recurrence, especially during pregnancy, as well as the lack of specific recommendations for performing alloplasty in women of reproductive age, does not allow adequate prevention of the disease. It should be noted that most manufacturers of allomaterials consider pregnancy a contraindication, and the advisability of performing allohernioplasty in women of fertile age is generally beyond the scope of the issues discussed.

Thus, the analysis of the clinical results of treatment of patients in the control group showed that the frequency of complications in the early and late postoperative periods was quite high (23.2%), but no deaths were noted. A critical analysis of unsatisfactory results in the control group shows shortcomings in tactical issues in the possibility of performing alloplasty in women of reproductive age. Despite the

comparability of the results of traditional treatment of patients with literature data, our results showed a number of shortcomings, which made it possible to outline ways to resolve this problem.

Taking into account the above, we have planned experimental studies to substantiate the feasibility of performing alloplasty for patients of reproductive age who plan to have children. To do this, we needed to develop a model of "pregnancy" in experimental animals and, based on this model, evaluate the extensibility of the tissues of the anterior abdominal wall at certain times when using different allomaterials. Pregnancy is a complex process, accompanied by both changes in the physiological properties of the body and leading to mechanical changes in the tissues of the anterior abdominal wall. To assess the extensibility of tissues, the "pregnancy" model was not faced with the task of reproducing physiological changes, but it was enough to show mechanical changes in the body.

Conclusions: In the traditional treatment of external abdominal hernias in women of fertile age in the early postoperative period, the frequency of surgical complications was 13.4%; in the long-term period, 8.5% of patients had a recurrence of the hernia. A critical analysis revealed that the unsatisfactory results were due to the shortcomings of tactical approaches in the ability to perform alloplasty in women of reproductive age.

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