



BRITISH **MEDICAL JOURNAL**



British Medical Journal

Volume 3, No.3, May 2023

Internet address: <http://ejournals.id/index.php/bmj>

E-mail: info@ejournals.id

Published by British Medical Journal

Issued Bimonthly

3 knoll drive. London. N14 5LU United Kingdom

+44 7542 987055

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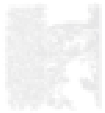
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MODIFIED METHOD FOR LAPAROSCOPIC HERNIOALLOPLASTY IN VENTRAL HERNIAS

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Abstract. The article presents the data of a clinical examination of 105 patients with ventral hernias, who were operated on in the surgical department of the multidisciplinary clinic of Samarkand State Medical University for the period from 2018 to 2022. Depending on the choice of treatment tactics, the patients were divided into two groups. The first group, the comparison group, consisted of 65 (61.9%) patients who underwent open hernia repair. The second group, the main group, consisted of 40 (38.1%) patients who were initially planned for laparoscopic prosthetic hernioplasty.

Keywords: ventral hernia, alloplasty, endovideosurgery.

The relevance of research. Postoperative ventral hernia (ventral hernia, cicatricial hernia) is a protrusion of internal organs (greater omentum, intestinal loops) that extend beyond the abdominal wall through defects in the scar formed after surgical treatment.

Postoperative hernias appear in those anatomical areas where typical surgical incisions were made, providing access to the abdominal organs: in the area of the white line of the abdomen, right iliac region, navel, lateral lumbar region, suprapubic region. The number of postoperative ventral hernias in the structure of all abdominal hernias is 20-30.5% [3]. The frequency of their occurrence, despite the widespread use of modern technologies and tactics, ranges from 7.5 to 30.7% [1], while the number of complications in the postoperative period when repairing ventral hernias reaches 30.5% [2].

One of the important factors that determine the results of surgical treatment of postoperative ventral hernias using mesh implants is the frequency of hernia recurrence, reaching 15-20% according to the literature [5]. Often, the cause of recurrence is not only complications after surgery, but also the method of fixing mesh implants when performing prosthetic corrective plasty. This is due, first of all, to the adhesive properties of most mesh prostheses, which ensure the quality of hernioplasty. Attempts to use non-adhesive meshes, for example, from polytetrafluoroethylene, are safe in relation to the development of adhesions and subsequent complications, but are ineffective in relation to the formation of a reliable scar in the area of the hernia ring.

The most promising for the development of laparoscopic hernioplasty technology was the appearance of composite mesh prostheses, consisting of an adhesive component on one surface, providing the effect of reliable hernioplasty, and a non-adhesive surface facing the internal organs of the abdominal cavity, allowing the rapid development of

neomesothelium adjacent to the intestine, preventing the formation of adhesions [4, 7].

In the literature and patent sources, there are a number of methods for laparoscopic hernioplasty for ventral hernias. At present, a number of randomized trials have already passed, proving the safety, efficacy, rapid rehabilitation and improvement in the quality of life of patients after laparoscopic ventral hernia repair, compared with traditional open hernioplasty with anterior abdominal wall prosthesis [6].

There is a known method of laparoscopic ventral hernia repair [8], including the introduction of trocars into the left hypochondrium and on the left side of the abdominal wall, pneumoperitoneum, panoramic laparoscopy, determining the size of the hernia orifice and dissecting adhesions, implanting and fixing the mesh on the abdominal wall with overlapping of the hernial orifice by 3 - 5 cm

The disadvantage of this method is the high risk of seroma formation in the hernial sac, as well as the risk of hernia pseudorecurrence, in which the abdominal wall tissue protrudes outward along with the mesh.

The aim of the study was to simplify the method of laparoscopic hernioplasty, to prevent the development of adhesions and recurrence of ventral hernia.

Materials and research methods.

The study is based on a clinical examination of 105 patients with ventral hernias who were operated on in the surgical department of the multidisciplinary clinic of Samarkand State Medical University for the period from 2018 to 2022. All patients were operated on in a planned manner. Depending on the choice of treatment tactics, the patients were divided into two groups. The first group, the comparison group, consisted of 65 (61.9%) patients who underwent open hernia repair. The second group, the main group, consisted of 40 (38.1%) patients who were scheduled for laparoscopic prosthetic hernioplasty. Of these, 37 (92.5%) patients managed to perform prosthetic hernioplasty by endovideosurgical method. The method of laparoscopic repair of ventral hernias improved by us differed from analogues in that after determining the size of the hernia orifice, the mesh implant was cut out extracorporeally so that its dimensions along the perimeter exceeded the dimensions of the hernia defect by 5 cm, then the external marking of the hernia defect was made and according to this marking, as well as along the edges of the implant, U-shaped ligatures were applied. Prior to the introduction of the implant into the abdominal cavity, the peritoneum was opened, the hernial sac was isolated, and a "pocket" was created in the preperitoneal space, retreating along the perimeter from the hernial orifice at least 5-6 cm, in the lower part of the anterior abdominal wall, a "pocket" was created from the hernial defect to the bottom full bladder. The bladder during the operation was filled with a solution of furacilin through a urethral catheter. Next, a finished implant was inserted into the abdominal cavity along the trocar, which was installed in the previously created "pocket" between the peritoneum and the musculoaponeurotic layer, and the ENDO CLOSE needle was fixed to the anterior abdominal wall with pre-applied U-shaped ligatures along the edge of the hernial defect, then, retreating along 5 cm from the hernial orifice, peritonization of the mesh implant was performed.

Thus, the caudal part of the endoprosthesis does not reach the bottom of the full bladder, and visual fixation of the endoprosthesis to the anterior abdominal wall does not injure the bladder wall. Desufflation is performed under visual control. The trocars are removed, the wounds are sutured in layers. A schematic representation of the improved endovideosurgical preperitoneal prosthetic hernioplasty for ventral hernias is shown in Figure 1.

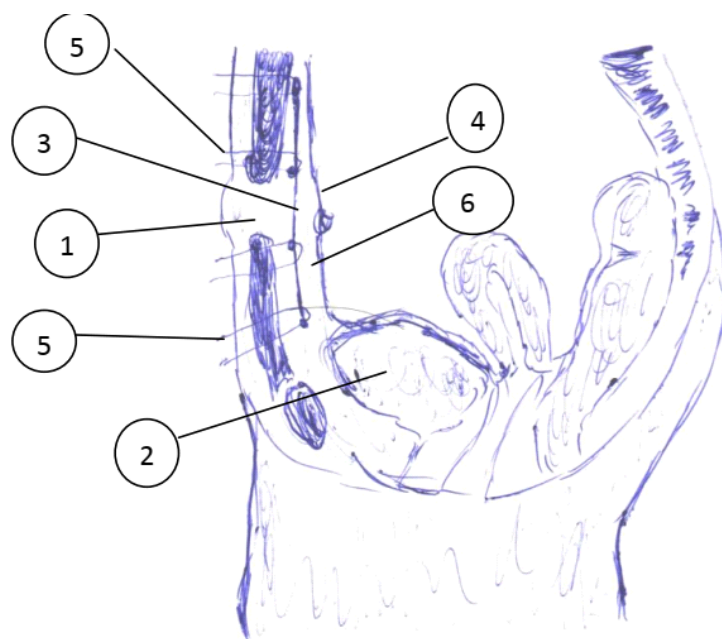


Fig. 6. The method of laparoscopic ventral hernia repair proposed by us: 1-hernial defect; 2-full bladder; 3 - non-composite (conventional) mesh implant; 4-peritoneum; 5-pre-imposed U-shaped seams; 6-pocket between the peritoneum and the muscular-aponeurotic layer extending from the hernial defect to the bottom of the full bladder

Research results.

Improving the choice of tactics for the surgical treatment of ventral hernias, the technique of performing laparoscopic prosthetic hernioplasty, and other innovations developed and implemented within the framework of this study could not but affect the immediate results of managing this category of patients.

In the early years, i.e. during the period of mastering the laparoscopic technology, performing prosthetic hernioplasty took a rather long time (up to 71.6 ± 0.7 minutes), however, with the growth of the experience of surgeons and the development of technology, the course of the operation significantly decreased to 51.4 ± 0.6 minutes (T-criterion = 6.74, $P < 0.001$) (Fig. 2).

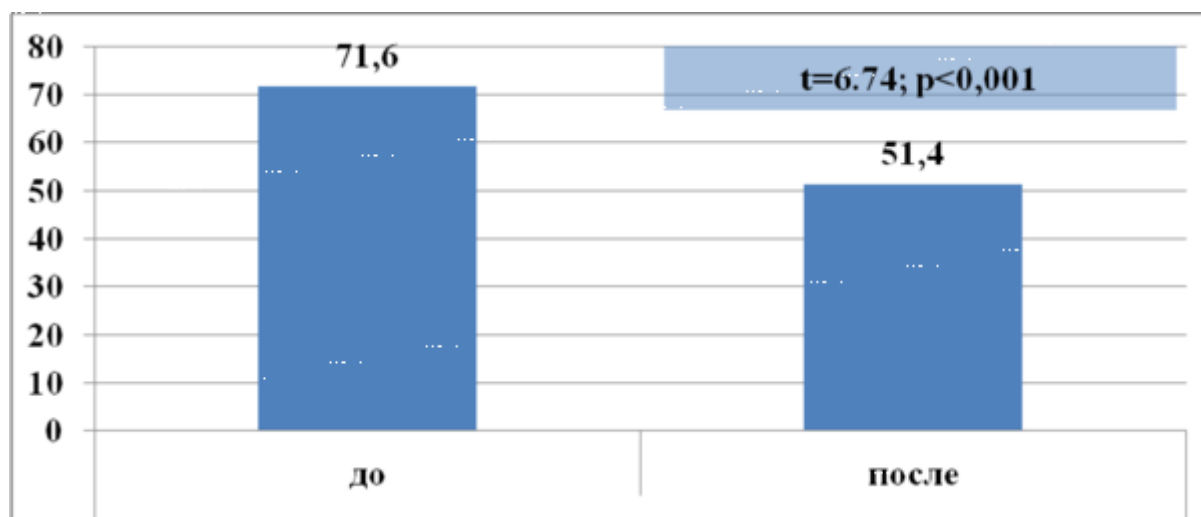


Рис. 2. Time of the operation during the period of mastering the endovideosurgical operation (min.)

In addition, it should be noted that during the period of mastering the technique, 3 (5.8%) patients underwent conversion, i.e. hernioplasty was completed by the open method.

The reason for the conversion was associated with a pronounced adhesive process in the abdominal cavity, concomitant diseases of the cardiovascular and respiratory systems, which responded to prolonged pneumoperitoneum. The reasons for the conversion are shown in Table 1.

Table 1**Reason for conversion of laparoscopic prosthetic hernia repair**

Reason for conversion	Number of patients (n=3)	
	abs.	%
Pronounced adhesive process and lengthening of the stage of separation of adhesions for more than 50 minutes:	3	100,0
- Intraoperative increase in blood pressure	2	66,7
- Intraoperative reduction of saturation	1	33,3

As can be seen from the table, in all cases (5.8% of the total number of patients in the main group), the cause of conversion was a pronounced adhesive process of the abdominal cavity in patients with postoperative ventral hernias.

Long-term separation of adhesions for more than 50 minutes, i.e. prolonged pneumoperitoneum manifested itself as an increase in blood pressure intraoperatively up to 200/100 mm Hg. Art. in 2 patients and in 1 patient with a concomitant chronic respiratory disease, it led to a decrease in blood oxygen saturation.

In all of the above 3 cases, operations were completed with open allohernioplasty using the "on lay" method.

Spasmodic changes in the parameters of the cardiovascular and respiratory system during surgery can be explained by the long course of pneumoperitoneum, which is a rather stressful factor associated with stretching of the peritoneum, rich in nerve endings. It should also be noted that the return to the initial level of indicators of the cardiovascular and respiratory system occurred after the conversion, i.e. elimination of pneumoperitoneum.

Conclusion. Comparison of the effectiveness of laparoscopic and open methods of hernioplasty showed clear advantages of the laparoscopic method. Thus, the duration of pain in the postoperative period after laparoscopic hernioplasty averaged 3.1 ± 0.8 days, after open hernioplasty, pain in the area of the postoperative wound persisted for 6.2 ± 1.8 days ($p < 0.05$). Early activation of patients was directly related to the severity and duration of pain in the postoperative period, the trauma of the surgery. After laparoscopic hernioplasty, earlier activation of patients was noted - as early as 9.3 ± 0.6 hours after surgery, while after open hernioplasty - only after 26.3 ± 1.2 hours ($p < 0.05$).

References:

1. Yu.Kh. Abdurakhmanov, V.K. Popovich, S.R. Dobrovolsky. Quality of life of patients with postoperative ventral hernia in the long-term period // *Khirurgiya. Journal them. N.I. Pirogov*. - 2010.- №7. S. 3236.
2. Belokonev V.I., Fedorina T.A., Kovaleva Z.V., Pushkin S.Yu., Nagapetyan S.V., Supilnikov A.A. Pathogenesis and surgical treatment of postoperative ventral hernias. / / Samara. - 2005. Biryaltsev V.N., Shaimardanov R.Sh., Filippov V.A., Khalilov H.M. Gernioabdominoplasty: Guide for doctors. - Kazan: Idel-press, 2008. - 102 c.
3. Dudelzon V.A., Parshikov V.V., Rotkov A.I. Intraperitoneal repair with mesh endoprostheses (IPOM) as a method of choice in modern herniology. Mat. scientific-practical.conf.with international participation "New technologies in surgery and intensive care", Saransk, 2010: 75-76
4. A.Z. Zamaleev, A.V. Kochnev, D.A. Slavin // Evaluation of various methods of endoprosthesis location in the repair of postoperative ventral hernias. // *Practical Medicine*, 2006, No. 3 (17), p. 37-38
5. Nelyubin P.S., Galota E.A., Timoshin A.D. Surgical treatment of patients with postoperative and recurrent ventral hernias. *Khirurgiya*. - 2007. - 7. - S. 71
6. V.V. Parshikov, V.V. Petrov, R.V., Romanov, A.A. Samsonov, A.V. Samsonov, V.P. Gradusov, A.B. Baburin // Quality of life of patients after hernioplasty / No. 1 (6) March, 2009. *Medical almanac*
7. K.V. Puchkova Author's method of laparoscopic treatment of ventral hernias, <http://www.puchkovk.ru/obschayahirurgiya/posleoperatsionnye-gryzhi/avtorskaya-metodika-lecheniya/>
8. Slavin L.E., Fedorov I.V., Sigal E.I. "Complications of abdominal hernia surgery", M., publishing house "Profile", 2005, p. 176
9. Akhmedov F.K., Negmatullaeva M.N., Features of the state of central hemodynamics and hemostasis in pregnant women with preeclampsia of varying degrees and severity / / *New Day of Medicine*. - 2020. - No. 1 (29) - S. 147-150.
10. Chistyakov D.B. Evolution of technology for the use of synthetic implants in herniology / Chistyakov D.B., Borisov A.E., Yashchenko A.S. // *Bulletin of surgery named after I.I. Grekov*. - 2011. - No. 2. - pp. 88-90