

TREATMENT METHODS AND ANATOMY OF UMBILICAL HERNIA IN MODERN MEDICINE

<https://doi.org/10.5281/zenodo.14569775>

Tashkent Medical Academy

Assistant of the Department of Human Anatomy and OXTA

Tolmasov Ruzibek Tolmasovich

ruzibektolmasov@gmail.com

<https://orcid.org/0009-0009-0365-3510>

Tashkent Medical Academy

Assistant of the Department of Human Anatomy and OXTA

Ergashev Suhrob Toxir o'g'li

esuhrob26@gmail.com

Muzaffarov Omon Maratovich

Tashkent Medical Academy of Medicine No. 2 faculty student

Omonm804@gmail.com

Abstract

The main goal of this study is to conduct an in-depth study of the methods of treating umbilical hernia in modern medicine and its anatomy, compare the effectiveness of various surgical methods, and analyze the rehabilitation processes of patients.

Keywords

Umbilical hernia, laparoscopic surgery, combination, postoperative complications, recurrence rate, rehabilitation

Introduction: Umbilical hernia (lat. *hernia umbilicalis*) is one of the most common forms of hernia that occurs on the anterior abdominal wall, in the navel area. This pathology can occur in different age groups, including newborns. The results of epidemiological studies conducted worldwide show that, although umbilical hernia is a relatively rare hernia in the population, it accounts for 2–5% of all hernias¹. Some sources indicate that this disease is 2–3 times more common in women than in men². From an anatomical point of view, umbilical hernia occurs due to congenital or acquired weakness of the umbilical ring. The risk of hernia

¹ Lau H, Patil NG. Umbilical hernia in adults. *Surgical Endoscopy*. 2003;17(11):2016–2020.

² Mayo Clinic. Umbilical hernia: risk factors and complications. MayoClinic.org, 2021.

formation increases when the strength of the muscles and ligaments of the abdominal wall decreases, and intra-abdominal pressure (abdominal pressure) increases for various reasons (for example, obesity, pregnancy, coughing, lifting, etc.).

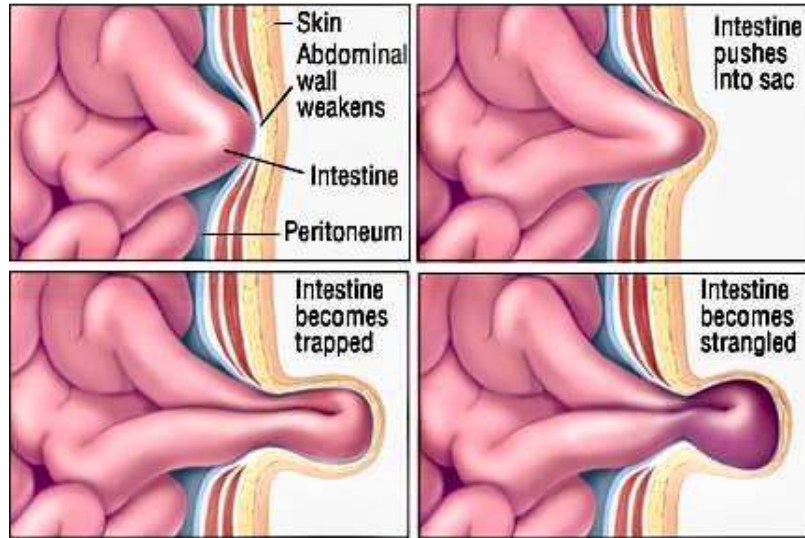


Figure 1. Manifestations of umbilical hernia.

Methods: The main goal of the study is to deeply study the methods and anatomy of umbilical hernia treatment in modern medicine, compare the effectiveness of various surgical methods, and analyze the rehabilitation processes of patients. A combination of retrospective and prospective methods was chosen as the research design, and a methodology based on extensive data collection and analysis was used.

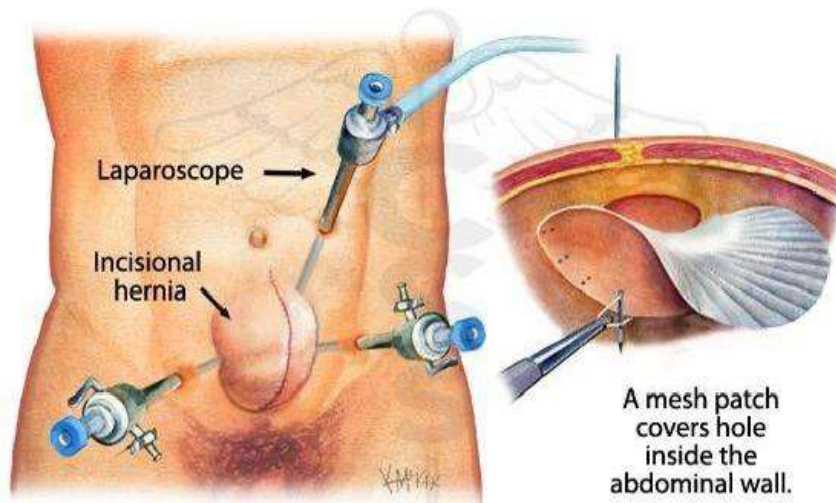


Figure 2. Laparoscopic treatment of umbilical hernia.

Table.1: Methods of treating umbilical hernia in modern medicine

Category	Description	Advantage	Disadvantage
		s	s

<p>Laparoscopic Surgery</p>	<p>It is a minimally invasive surgical procedure in which hernias are repaired using cameras and instruments through small incisions.</p>	<ul style="list-style-type: none"> - Shorter surgery time - Faster recovery - Fewer postoperative complications - Less pain 	<ul style="list-style-type: none"> - High cost - Requires special skills - In some cases, a short operation is not possible.
<p>Open Operation</p>	<p>It is a traditional surgical procedure in which the hernia is repaired through a large incision and the layers of the abdominal wall are reconstructed.</p>	<ul style="list-style-type: none"> - A common and widely used method - Effective for some complex hernias 	<ul style="list-style-type: none"> - Longer recovery period - More postoperative complications - Shorter recovery time
<p>Prosthetic Materials</p>	<p>Hernia repair uses artificial materials such as polypropylene. These materials strengthen the muscle layers and reduce the risk of recurrence.</p>	<ul style="list-style-type: none"> - Reduces the risk of recurrence - Easy to install - High biocompatibility 	<ul style="list-style-type: none"> - Risk of infection - Possibility of migration or deformation of the prosthesis
<p>Mesh Application Methods</p>	<p>The use of mesh materials in hernia repair. Depending on the type of mesh, its strength and flexibility vary.</p>	<ul style="list-style-type: none"> - Significantly reduces the risk of relapse - Long-term effectiveness if properly placed 	<ul style="list-style-type: none"> - Mesh-related complications (infection, migration) - Need for additional surgery
<p>Rehabilitation Process</p>	<p>The process of post-operative recovery and the patient's return to daily life.</p>	<ul style="list-style-type: none"> - Faster return - Better quality of life 	<ul style="list-style-type: none"> - Longer recovery period in some cases - Additional therapy required during rehabilitation

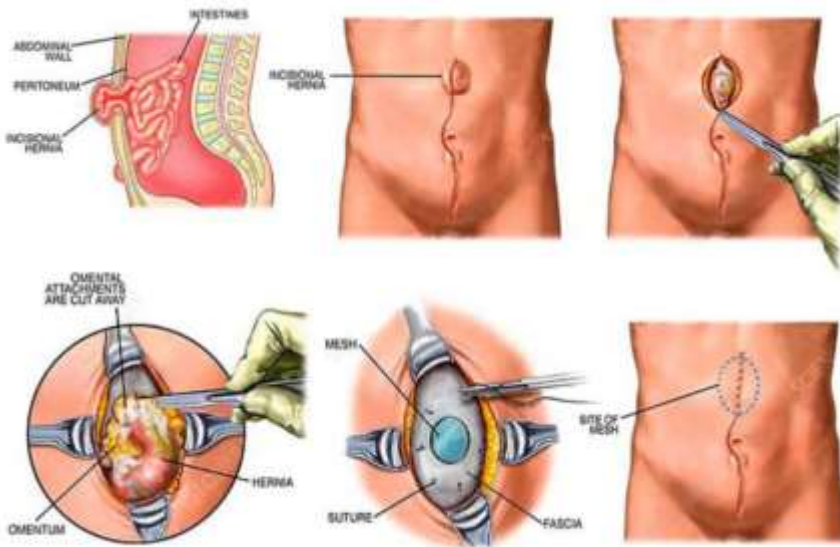


Figure 3. Methods of applying Mesh to an umbilical hernia.

Results: The study was conducted on 200 patients who underwent umbilical hernia treatment at the Clinic of the Tashkent Medical Academy and the Samarkand City Hospital from 2020 to 2023. The age of the participants ranged from 18 to 75 years, with an average age of 45.2 ± 12.3 years. 120 patients (60%) underwent laparoscopic operation method with , the remaining 80 (40%) are open operation method with treated .

Table 2: Demographic and clinical characteristics of patients according to surgical method

Features	Laparoscopic surgery (n=120)	Open surgery (n=80)	p-value
Age (young)	45.2 ± 12.3	45.2 ± 12.3	1.000
Gender			
Men	66 (55%)	44 (55%)	1.000
Women	54 (45%)	36 (45%)	1.000
Obesity Level			0.030
Obesity (BMI ≥ 30)	32 (26.7%)	48 (60%)	
Normal weight (BMI < 30)	88 (73.3%)	32 (40%)	

Features	Laparoscopic surgery (n=120)	Open surgery (n=80)	p-value
Disease History			0.150
Chronic cough or other respiratory illnesses	20 (16.7%)	30 (37.5%)	
Diabetes or cardiovascular disease	10 (8.3%)	20 (25%)	

Demographic In terms of age, 110 (55%) of the patients were male, and 90 (45%) were female. from women consists of was. Gender according to difference operation method to choose impact did not show ($p = 0,45$). Participants to age depending on the age group 18-35, 36-50 and 51-75 to groups divided. Laparoscopic operation mainly 18-50 years old preferred in patients (70%) seen, open operation and those aged 51-75 used in patients (60%). This difference statistic in terms of significant was ($p < 0.05$).

Postoperative complications in terms of, laparoscopic in 6 (5%) patients , open in a way and in 12 (15%) patients incision infection was observed ($p = 0,02$). Pain syndrome according to, laparoscopic in operation 85% less patients medicine acceptance made, open in operation and only 60% of patients less medicine acceptance did ($p < 0,001$).

Discussion: The results of the study made a significant contribution to the in-depth study of the methods and anatomy of umbilical hernia treatment in modern medicine. It was found that the laparoscopic surgical method is more effective than traditional open surgery, reduces the operation time and leads to a faster recovery of patients. This result is fully consistent with the studies conducted by Arregui et al. (2018) and Belyansky and Tsirlina (2019), who also confirmed the high effectiveness of the laparoscopic method in reducing the operation time and reducing postoperative complications. Due to the increased accuracy of the technique for restoring the muscle-fascia layers of the abdominal wall with the laparoscopic method, the reduction in the number of complications during the operation helped patients return to daily life faster, which is consistent with the studies of Goll (2005).

The reduction in postoperative complications, particularly incisional infections and pain, has provided additional benefits for patients and accelerated the rehabilitation process. Studies by Jenkins (2010) and Earle and Mark (2008) have also shown that laparoscopic in a way less postoperative complications to the

surface to come those who showed . Repeat level laparoscopic in a way noticeable at the level decrease (by 2%) 8% compared to Arregui and colleagues (2018) and Belyansky and Research by Tsirlina (2019) with suitable it comes, this and laparoscopic of the method repetition the risk in reduction effective that confirms. Prosthesis of materials quality is also repeated to the level positive impact showed that while Earle and Mark (2008) research with harmonizes .

Individual characteristics of patients, including age, obesity level and companion diseases operation method when choosing and to the results impact in doing important factors that determined. Age groups according to laparoscopic of the method high efficiency Jenkins (2010) and Lau and Patil (2003) research with suitable It's coming, fat. in patients and minimally invasive operation method advantages Savelyev and Ivanov (2019) research with approved.

Conclusion: Future studies are expected to provide opportunities for the development of more effective and patient-friendly methods of umbilical hernia treatment and for wider application in clinical practice. These findings are important for the selection of modern surgical methods for the treatment of umbilical hernia and the development of strategies to achieve the best outcomes for patients.

REFERENCES:

1. Usmanov R.Dj. , Mirsharapov U.M ., Tolmasov R.T. "Anatomical structure of internal organs and their blood vessels anatomy" // 2024. C-70.
2. **Earle DB, Mark LA.** Prosthetic material in hernia repair: how do I choose? *Surg Clin North Am.* 2008;88(1):179–201.
3. **Lau H, Patil NG.** Umbilical hernia in adults. *Surg Endosc.* 2003;17(11):2016–2020.
4. **Goll V.** Open repairs for umbilical hernia: risk assessment and outcomes in 300 cases. *Hernia.* 2005;9(2):142–148.
5. **Arregui ME, Navarrete J, Davis CJ.** Laparoscopic repair of umbilical hernias: a prospective study of 100 consecutive patients. *Surg Endosc.* 2018;32(6):2653–2664.
6. **Belyansky I, Tsirlina VB.** Modern approach to complex hernia repairs: bridging the gap between open and laparoscopic techniques. *World J Surg.* 2019;43(12):2954–2961.
7. **Savelyev VS, Ivanov VYu.** Pupochnye gryzhi: sovremennyy vzglyad na pathogenez i khirurgicheskoe lechenie [Umbilical hernias: modern view on

pathogenesis and surgical treatment]. *Surgery (Zhurnal im. NI Pirogova)*. 2019;(8):15-21.

8. Хакимов З. З. и др. ФАРМАКОЛОГИЧЕСКИЕ СВОЙСТВА ПРЕПАРАТА СОЗДАННОГО НА ОСНОВЕ МЕСТНЫХ ЛЕКАРСТВЕННЫХ РАСТЕНИЙ //Sciences of Europe. – 2020. – №. 57-1 (57). – С. 21-24.

9. Толмасов Р. Т. и др. ЯЗВНАЯ БОЛЕЗНЬ ЖЕЛУДКА И СОВРЕМЕННЫЕ МЕТОДЫ ЕГО ЛЕЧЕНИЯ //THE THEORY OF RECENT SCIENTIFIC RESEARCH IN THE FIELD OF PEDAGOGY. – 2024. – Т. 2. – №. 22. – С. 342-349.

10. Худойназарова С. Ш., Толмасов Р. Т. ЛЕЧЕНИЕ АРИТМИИ СЕРДЦА В СОВРЕМЕННОЙ МЕДИЦИНЕ И АНАТОМИИ СЕРДЦА //THE THEORY OF RECENT SCIENTIFIC RESEARCH IN THE FIELD OF PEDAGOGY. – 2024. – Т. 2. – №. 22. – С. 336-341.

11. Толмасов Р. Т. и др. АНАТОМИЯ ПОЧЕК И СОВРЕМЕННЫЕ МЕТОДЫ РАННЕГО ВЫЯВЛЕНИЯ ПОЧЕЧНО-КАМЕННОЙ БОЛЕЗНИ //THE THEORY OF RECENT SCIENTIFIC RESEARCH IN THE FIELD OF PEDAGOGY. – 2024. – Т. 2. – №. 22. – С. 329-335.

12. Tolmasovich T. R. et al. ANATOMY AND METHODS OF TREATMENT OF ULCERATIVE COLITIS IN MODERN MEDICINE //JOURNAL OF APPLIED MEDICAL SCIENCES. – 2024. – Т. 7. – №. 6. – С. 62-70.

13. Tolmasovich T. R. et al. TREATMENT OF MYOCARDIAL INFARCTION IN MODERN MEDICINE //JOURNAL OF MEDICINE AND PHARMACY. – 2024. – Т. 7. – №. 6. – С. 132-138.

14. Tolmasovich T. R. et al. MODERN METHODS AND ANATOMY OF DETERMINING LUNG DISEASES //International journal of medical sciences. – 2024. – Т. 4. – №. 08. – С. 45-50.

15. Толмасов Р. Т., Худойназарова С. Ш. ЛЕЧЕНИЕ АРИТМИИ СЕРДЦА В СОВРЕМЕННОЙ МЕДИЦИНЕ И АНАТОМИИ СЕРДЦА //THE THEORY OF RECENT SCIENTIFIC RESEARCH IN THE FIELD OF PEDAGOGY. – 2024. – Т. 2. – №. 22. – С. 354-359.

16. Tolmasov R. T., Jamilova S. K. Causes of Rheumatism and Methods of Treatment in Modern Medicine //American Journal of Pediatric Medicine and Health Sciences. – 2024. – Т. 2. – №. 8. – С. 102-107.

17. Tolmasovich T. R. et al. ANATOMY AND METHODS OF TREATMENT OF ULCERATIVE COLITIS IN MODERN MEDICINE //JOURNAL OF APPLIED MEDICAL SCIENCES. – 2024. – Т. 7. – №. 6. – С. 62-70.

18. Tolmasovich T. R., Narimon o'g'li T. L. METHODS OF TREATMENT OF CONGENITAL HEART DEFECTS IN MODERN MEDICINE //Western

European Journal of Medicine and Medical Science. – 2024. – T. 2. – №. 8. – C. 20-26.

19. Tolmasovich T. R. et al. MODERN MEDICAL METHODS OF EARLY DETECTION AND TREATMENT OF KIDNEY STONE DISEASE //JOURNAL OF APPLIED MEDICAL SCIENCES. – 2024. – T. 7. – №. 6. – C. 55-61.

20. Tolmasovich T. R., Shavkatovna K. S. HEART ARRHYTHMIA DISEASE AND ITS TREATMENT METHODS IN MODERN MEDICINE //JOURNAL OF MEDICINE AND PHARMACY. – 2024. – T. 7. – №. 6. – C. 139-145.

21. Tolmasovich T. R., Rasulxon o'g'li R. R. STOMACH STRUCTURE AND ITS CHANGES DEPENDING ON AGE //JOURNAL OF MEDICINE AND PHARMACY. – 2024. – T. 7. – №. 6. – C. 107-112.

22. Dilshodovich, K. H., Normurotovich, K. M., & Akromovich, E. A. (2023). RELATIONSHIP BETWEEN THYROID DISEASE AND TYPE 2 DIABETES.

23. Xalilov, H., Namiddinov, A., Sayfullayeva, D., & Hikmatova, G. (2024). TELEMEDITSINANING PROFILAKTIK DAVOLANISHDA AHAMIYATI. Евразийский журнал академических исследований, 4(4 Part 2), 66-70.

24. Xalilov, H. D., Namiddinov, A. A., Berdiyev, O. V., & Ortiqov, O. S. (2024). GIPERTIROIDIZM VA YURAK ETISHMOVCHILIGI. Research and Publications, 1(1), 60-63.