



# **SURGICAL OPTIONS FOR ANTERIOR ABDOMINAL WALL HERNIAS AND ABDOMINOPOTOSIS (LITERATURE REVIEW)**

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<b>Article history:</b>	<b>Abstract:</b>
<b>Received:</b> April 20 <sup>th</sup> 2024 <b>Accepted:</b> May 14 <sup>th</sup> 2024	Correction of anterior abdominal wall deformities is one of the most common surgical interventions in the modern practice of a plastic surgeon. However, this method is still not fully resolved. Thus, new methods of surgical correction appear and old ones are improved. Each physician chooses an approach to solve the problem of restoring the aesthetic contours of the anterior abdominal wall and meeting the needs of the patient. According to the American Society of Plastic and Reconstructive Surgeons, abdominoplasty is the fifth most common among aesthetic plastic surgeries to correct deformities and defects of the anterior abdominal wall caused by abdominoptosis.
<b>Keywords:</b> surgical treatment, abdominophotosis, front abdominal hurricane	

**INTRODUCTION.** Performing abdominoplasty in various modifications allows to restore the muscular-aponeurotic framework of the anterior abdominal wall and solves functional, hygienic and aesthetic problems. Abdominoplasty also helps to get rid of soft tissue contour deformities of the anterior abdominal wall[1] . With the rise of bariatric treatments, concepts of reconstructive surgery in the postpartum period, and widespread coverage of aesthetic surgery in the mainstream media, the number of surgeries performed is expected to increase annually. In addition, abdominoplasty is one of the most common combinations of reconstructive and aesthetic surgery [3].

According to statistics from the National American Society of Plastic and Cosmetic Surgeons [4], liposuction (414,315 surgeries) was the most popular surgery in 2016, and abdominoplasty (181,540 surgeries) ranked third, second only to breast augmentation.

Abdominoptosis is often accompanied by hernias of various kinds. Due to these problems, abdominoplasty is often combined with hernioplasty and is considered as a complex reconstruction of the muscular-aponeurotic framework of the anterior abdominal wall. This is because pre-existing hernias cause increasing thickening and deformation of the anterior abdominal wall tissues. Comprehensive treatment can reduce the number of anaesthesia and hospitalisations required, one-stage treatment, reduce treatment costs, shorten rehabilitation time and solve aesthetic and functional problems at the same time [5].

Among the above-mentioned hernias, ventral and umbilical hernias combined with abdominoptosis are the most common.

Abdominal wound dissection after wide access and laparotomy are the most common causes of ventral hernia development, accounting for more than 20% of all complications occurring in patients undergoing laparotomy. In addition, patients with a body mass index (BMI) greater than 31 kg/m<sup>2</sup> are more prone to postoperative hernias, making bariatric patients the most vulnerable to these complications. This is due to overstretching and delamination of the anterior abdominal wall muscles and aponeurosis, which can be referred to as the main framework and barrier to hernia formation [3].

Surgeons from the American College of Surgeons National Surgical Quality Improvement Programme conducted an analysis of abdominoplasty performed from 2005 to 2011 in 2014. The history of 4925 patients was analysed. Abdominoplasty alone was performed in 63.7% of cases, and 36.3% were performed concurrently with herniorrhaphy. Patients were also categorised by BMI: more than 27.5, high-risk group; more than 40, high-risk group. The results showed that patients' recovery outcomes after abdominoplasty with herniorrhaphy for small and small ventral hernia were about the same as those of patients obtained without herniorrhaphy (9.8% difference). Nevertheless, abdominoplasty with herniorrhaphy for ventral hernias of large size caused more problems and required more time for patients' postoperative recovery than abdominoplasty without herniorrhaphy [6].

In a study conducted by K. Harth et al. [7], it was found that postoperative complications increased fivefold when abdominoplasty with herniorrhaphy and mesh endoprosthesis placement was performed, mainly due to inflammation in the reinforced area. The authors state that Sublay or Inlay mesh is preferable for rebuilding the musculo-aponeurotic framework after



ventral hernia repair. Otherwise, the contact of the endoprosthesis with the wound surface of the soft tissues of the anterior abdominal wall increases the risk of inflammatory reactions.

When performing abdominoplasty with umbilical hernia repair [8], the overall postoperative complications were slightly higher than in classic abdominoplasty (11.9% vs. 9.8%). The overall complication rate increased slightly with the use of surgical mesh (from 17.3% to 21.2%). In addition, an increase in overall complications should be noted in smokers ( $p=0.003$ ), alcohol users ( $p=0.002$ ), hypertensive patients ( $p=0.027$ ), patients with diabetes mellitus ( $p<0.001$ ) and systemic sepsis ( $p<0.001$ ). When performing abdominoplasty with umbilical hernia repair, the use of Sublay or Inlay technique was one of the great advantages of the method, as it allowed preserving the blood supply to the umbilicus and adequately repairing the hernia defect.

BMI patients undergoing bariatric surgery subsequently suffer from excessive amounts of stretched soft tissue. They also say they are dissatisfied with their appearance and restricted mobility, and suffer significant weight loss [9]. Wide access and its variations, including the "Fleur de lis" type access, are available for abdominoplasty in bariatric patients. Various abdominoplasty and herniorrhaphy perform well in such patients [10].

It is well known that generalised obesity is an important risk factor for many complications that may occur postoperatively. Obesity contributes to the development of ventral hernias (both primary and after abdominal surgery) and is also a major cause of serious therapeutic diseases such as hypertension, coronary heart disease, early vascular atherosclerosis, type 2 diabetes mellitus and hormonal disorders, which significantly increase the risk of premature death. In addition, regardless of prior bariatric surgery, high body mass index (BMI) increases the risk of postoperative complications after anterior abdominal wall contouring surgery by up to 80% [11]. Deep vein thrombosis, which can lead to death, is one of the most common postoperative complications. Prevention of thrombosis is an important part of all stages of surgery: pre-, intra- and postoperative period, because performing extensive abdominoplasty increases the risk of lower extremity venous thrombosis and thromboembolism. Well-dosed thromboprophylaxis can significantly reduce the likelihood of thromboembolic complications, as shown by multiple studies. Thus, the J. Caprini is recommended to estimate the probability of thromboembolic complications. This assessment was confirmed by retrospective register studies involving more than 16,000 patients in general surgery, vascular, urological, and otorhinolaryngology, as well as patients undergoing plastic and

reconstructive surgeries and receiving intensive therapy [4].

**CONCLUSION:** the analysis of the literature devoted to the descriptions of combined abdominoplasty with hernia correction of the anterior abdominal wall has shown that the simultaneous performance of these operations has both significant advantages and disadvantages. Studying the possibility of combining abdominoplasty and hernia repair of anterior abdominal wall defects is an extremely important issue that has medical, social, and economic significance [6]. When these patients have functional limitations, their character, professional and social life suffer [11].

Abdominoplasty is one of the most popular aesthetic surgical techniques to correct ptotic, redundant soft tissues of the anterior abdominal wall, especially in the presence of hernias. The great advantages of simultaneous abdominoplasty with herniorrhaphy include reduced time and number of surgeries, greater access to the procedure, less anaesthesia, less money for the patient, shorter hospital stays and simultaneous resolution of functional and aesthetic concerns.

However, research has shown that in some cases, there is a higher risk of postoperative complications when abdominoplasty and herniorrhaphy are combined. As a result, surgeons should be very careful when assessing the patient's somatic status preoperatively and when planning surgical approaches, not based only on the patient's wishes and clinical situation.

In short, abdominoplasty provides wide access to all parts of the anterior abdominal wall, which makes manipulation more convenient and easier, especially when dealing with large postoperative hernias. It is worth noting that the number of problems caused by such methods is slightly increased. This means that the specialist must be ready and able to react to them in time and decide how to eliminate them.

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