

## Methods of Combining Liposuction and Abdominoplasty

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**Abstract:** Silhouette largely determines the impression we make on others. A flat and smooth abdomen is one of the criteria of attractiveness. Nowadays, a 'harmonious abdomen' has become an aesthetic norm. This makes it necessary to search for ever new methods of surgical correction of the anterior abdominal wall that lead to improved aesthetic results without causing complications.

**Keywords:** Liposuction, abdominoplasty, adipose tissue, abdominopotosis.

**Introduction.** Liposuction is a surgical procedure that involves getting rid of excess fatty tissue in areas of the body from which it cannot be removed naturally, through diet or exercise. Indications for liposuction is most often the presence of localised deposits of lipid tissue. Liposuction as one of the stages of abdominoplasty, on the one hand, increases the possibility of correcting body contours and helps to achieve the desired result. However, on the other hand, some methods of liposuction during abdominoplasty can negatively affect the conditions of wound healing and lead to complications [2].

When liposuction is performed during abdominoplasty, postoperative complications are more common. The occurrence of complications after liposuction is due to the general postoperative condition of the patient. Liposuction often increases the time of wound healing in the rehabilitation period. According to the temporal relationship to abdominoplasty, most researchers distinguish three types of liposuction. Preliminary liposuction involves performing it before abdominoplasty. The indication for preliminary liposuction is an excessively thick subcutaneous fat layer on the anterior abdominal wall, which, if performed only during abdominoplasty, worsens the aesthetic result of the operation and leads to complications after abdominoplasty [3]. Preliminary liposuction is performed when the patient refuses vertical abdominoplasty. In these cases, liposuction of the abdomen (in particular, the suprailiac region) in combination with treatment of the flanks and lateral surfaces of the trunk allows to significantly reduce the thickness of the skin-fat flap and, thus, improve the outcomes of subsequent abdominoplasty [4].

Analysis of modern types of liposuction performed during abdominoplasty shows that in most cases, when performed in the adjacent zone with the main wound, it slows down the wound healing process and increases the risk of complications. Liposuction performed through the wall of the main wound is connected by numerous channels with the operating area and wound exudate, which is formed in the area of fat tissue removal, migrates into the wound of the anterior abdominal wall, which often leads to the formation of seromas [5]. Liposuction performed some time after abdominoplasty is considered the least effective way to combine these two cosmetic procedures. This is explained by the fact that after abdominoplasty, the subcutaneous fat layer of the anterior abdominal wall thins, and this, consequently, leads to skin relaxation and deterioration of the aesthetic result of the procedure. However, in the formation of adipose tissue layering at the extremes of the horizontal scar, additional liposuction prescribed after abdominoplasty may be effective [7, 8]. Thus, in the course of in-depth theoretical analysis, we concluded that liposuction performed during abdominoplasty is currently among the most common and effective methods in terms of time of performance.

Abdominoplasty is one of the most popular aesthetic surgical techniques for correcting ptotic, excess soft tissue 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.

Preoperative and delayed liposuction are used much less frequently. Three methods of liposuction are distinguished by the amount of removed fat tissue: the first method involves limited (minimal) liposuction of the wound edges during abdominoplasty in order to reduce the formation of 'lugs' in the extreme points of horizontal access (in traditional and mini-abdominoplasty) and the bulge of the skin suture in the suprailiac region (in vertical abdominoplasty) [9, 10]. The second method is to perform large-scale (significant) liposuction in the area of the lateral trunk by means of additional accesses remote from the main wound. The reliability and safety of this method is due to the fact that the liposuction wound zone is not connected with the main abdominoplasty wound. The third method assumes the scale of the medium degree, when liposuction is performed through the wall of the main wound, but with minimal detachment of skin-fat flaps, which prevents the formation of 'dead' space in the abdominoplasty wound. Significant liposuction is also performed through the wall of the main wound, which is an extremely dangerous and undesirable method, as it leads to the highest percentage of postoperative complications.

Thus, to date, there is no consensus on the timing of abdominoplasty, its volume and surgical access for liposuction. In a study conducted by K. Harth et al. [7], it was found that postoperative complications in abdominoplasty with herniorrhaphy and mesh endoprosthesis placement increased fivefold, mainly due to inflammation in the strengthened 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 similar patients [11].

**Conclusions:** generalised obesity is thus 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 that significantly increase the risk of premature death. In addition, regardless of prior bariatric surgery.

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