



## Liposuction limits Secondary Abdominoplasty

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### Abstract

The abdomen is among the most frequently requested regions for undergoing liposuction. However, liposuction alone is not always sufficient to address abdominal bulging, and it is likely that patients will require skin removal and muscle tightening by a secondary abdominoplasty. Few data exist in the literature regarding the limitations of secondary abdominoplasties following a previous liposuction. It is believed that because of skin retraction and tightening, much less skin can be removed than in a primary abdominoplasty. We report on a 70-year-old woman with significant abdominal bulging who underwent a primary liposuction but remained unhappy with the result. During a secondary abdominoplasty, the abdominal flap was widely undermined, and musculofascial repair and a pubic lift were added. However, it was not possible to excise the entire skin of the lower abdomen, and the defect resulting from the umbilicus excision left a vertical midline scar just above the horizontal scar. If we had resected the entire skin of the lower abdomen en bloc, major difficulties would have been encountered to close the wound. Because barriers to perform liposuctions are continually decreasing, young nulliparous women in particular should be informed that liposuction of the abdomen limits secondary abdominoplasties.

### Introduction

With the dramatic increase in the number of overweight patients in recent years, fat deposits in the abdomen have also increased in men and women. Localized fat deposits in the abdomen are even observed in normal- or low-weight patients. Therefore, the abdomen is among the most frequently requested regions for undergoing liposuction. This method allows for the removal of a great amount of fat, including fat that is located superficially in the skin. Superficial fat removal is believed to contribute to enhanced skin retraction and tightening, even to the point of partially correcting a moderate panniculus [1].

However, abdominal bulging does not always consist only of fat deposit; it can have a multifactorial nature as a result of a very large panniculus, muscular laxity and rectus diastasis or intra abdominal fat accumulations [2]. In these cases, liposuction alone is not sufficient to address abdominal bulging, and it is likely that the patient will require skin removal and muscle tightening by a concomitant or secondary abdominoplasty.

Concomitant abdominoplasties are frequently performed procedures, and they are considered safe and effective. However, limited data exist in the literature regarding the general incidence of secondary abdominoplasties following a previous liposuction. In one of the few studies on this topic, Matarasso [3] noted that only 3/18ths of 562 patients with abdominal procedures underwent a secondary abdominoplasty after liposuction. He mentioned that liposuction leads to scarring, skin retraction, tightening and inelasticity and can restrict the undermined skin flap from unfurling. This should be considered when demarcating the planned skin excision to avoid over resection of the abdominal flap; therefore, a staged skin excision should be performed.

We report on the case of a patient who underwent secondary abdominoplasty for abdominal bulging.

### Case Presentation

A 70-year-old woman with significant abdominal bulging underwent traditional deep and superficial liposuction elsewhere. The procedure did not address the bulging or the panniculus sufficiently, and the patient remained unhappy with the result. Some years later, she underwent a second attempt to improve her abdominal shape and requested further surgery. She presented with very pronounced abdominal bulging caused by poor muscular tone of both rectus muscles, moderate diastasis recti and bulging and ptosis of the mons pubis. Additionally, she showed a small umbilical hernia in the upright position (Figure 1A). The skin of the lower abdomen was severely

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**Figure 1:** A 70-year-old woman who had undergone primary liposuction of the entire abdominal area.

**A)** Before the abdominoplasty.

**B)** 6 months after a secondary abdominoplasty. The scar from excision of the umbilical stalk is visible just above the horizontal scar and indicates the limited skin resection.

damaged by the initial liposuction and was flaccid and irregularly folded.

Ultrasound confirmed the clinical findings of moderate diastasis recti and umbilical hernia. The distance between both rectus muscles was 3 cm at maximum.

Prior to the operation, the patient was informed that the abdominal bulging could not be satisfactorily repaired because of the severe relaxation of the rectus muscles and because of the previous liposuction. Less skin would likely be resected than normal in an untreated abdomen. However, all the other problems would be addressed as usual. The patient agreed to undergo the procedure.

The operation proceeded uneventfully; the abdominal flap was widely undermined, the umbilical hernia was closed, and musculofascial repair and a pubic lift were also performed [4]. To avoid over resection of the skin flap, a staged skin excision was performed after unfurling the considerably scarred and inelastic subcutaneous tissues. However, it was not possible to excise the entire skin of the lower abdomen; the defect resulting from the umbilicus excision could not be resected, and a vertical midline scar resulted just above the horizontal scar above the mons pubis (Figure 1B). The patient was encouraged to exercise and further train the abdominal and relaxed rectus muscles.

## Results and Discussion

In this patient's secondary abdominoplasty, considerably less skin could be resected than usual in a primary abdominoplasty. If we had resected the entire skin of the lower abdomen en bloc (as is customary

in a primary abdominoplasty), major difficulties would have been encountered to close the wound. Even if that had been possible under maximal tension, we would have feared a compromised blood supply and tissue loss at the incision line. Because we had anticipated these difficulties, we chose a staged resection and had to complete our excision that was already below the umbilicus.

Cormenzana et al. [5] also reported that secondary abdominoplasties deserve special consideration. In their report, they considered secondary cases to be only those cases involving patients who had undergone an excisional abdomen contour surgery previously (primary abdominoplasty) and not a previous liposuction. They mentioned that a central secondary skin resection is very rare but is more likely a result of excessive central resection than of scarring. In summary, they concluded that the risk in their secondary cases was similar to that in the primary procedure. By contrast, Matarasso [3] stated that secondary operations, by their very nature, are fundamentally different from the primary procedure. He identified significant problems that may be encountered and made recommendations for treatment. In citing Cormenzana, Matarasso [3] stated that undermining must be even more extensive during the secondary procedure, but because of the "delay phenomenon", it may be safely performed. This undermining was shown to be necessary to recruit sufficient tissue to ensure appropriate wound location and closure. Because of the extensive scarring of Scarpa's fascia, he added that it might be useful to score the undersurface of the flap to unfurl and maximally expand the flap. To accomplish appropriate wound closure, he recommended staged excision, sometimes even at maximum flexion on the operation table. Patients with a previous abdominal liposuction should be informed about the different nature of the secondary procedure: less skin can be resected, and an additional vertical scar from the closed umbilical stalk is to be expected, thus creating more difficulties in gaining a perfect result. Because barriers to perform liposuction care continually decreasing, young nulliparous women in particular should be informed that liposuction of the abdomen limits secondary abdominoplasties.

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