

# Cosmetic Body Lift

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**Background:** High-tension lateral abdominoplasty provides ideal central contouring of the abdomen, but it inadequately addresses laxity and fullness in the flank and lateral thigh. The adjunct of liposuction improves abdomen contour, but excess flank soft tissue often persists. Small case series in the literature have suggested an extended abdominoplasty to address these deficits with variable outcomes. The senior author (S.T.H.) reports his successes in the largest series to date of a 270-degree extended lipoabdominoplasty (cosmetic body lift) for non-massive weight loss patients to optimally contour the abdomen, hips, and flanks while lifting the lateral thigh and reducing thigh circumference.

**Methods:** A retrospective chart review was conducted on patients who had a cosmetic body lift between 2004 and 2014. On average, outcomes were reviewed 1 year postoperatively.

**Results:** From 2004 to 2014, 72 consecutive patients (one male patient) with an average age of 53 years (range, 33 to 73 years) had a cosmetic body lift. All patients were nonsmokers and had insignificant preoperative comorbidities. Average total liposuction volume was 3067 cc. Complications included seroma in 2.8 percent (two of 72), infection in 4.2 percent (three of 72), delayed wound healing in 5.6 percent (four of 72), necrosis/ischemia in 4.2 percent (three of 72), revision in 18.1 percent (13 of 72), and deep vein thrombosis in 1.4 percent (one of 72), with zero hematomas.

**Conclusions:** This investigation is the largest series to date to evaluate the cosmetic body lift for the non-massive weight loss population. Consistent with reported complication rates of lipoabdominoplasty in the literature, the cosmetic body lift is a safe and effective operation for optimal waist contouring. (*Plast. Reconstr. Surg.* 137: 453, 2016.)

**CLINICAL QUESTION/LEVEL OF EVIDENCE:** Therapeutic, IV.

Lockwood recognized that the standard abdominoplasty did not address the lateral abdominal laxity that is inherent with aging. His high-tension abdominoplasty challenged the current standards and selectively undermined the central abdominal flap with more aggressive resection of lower lateral abdominal tissue. Despite improved contour, patients still had persistent lipodystrophy of the lateral flanks and thighs.<sup>1-3</sup> Thus, Lockwood and others identified the importance of circumferential truncal contouring and incorporated liposuction into this procedure. Despite the treatment of flank lipodystrophy, lateral skin laxity persisted.<sup>4-9</sup> As such, surgeons are frequently required to excise lateral skin excess (or dog-ears) during a second operation.<sup>10,11</sup>

Initially, Hunstad and Repta suggested a single-stage, 270-degree, extended abdominoplasty to contour significant lateral truncal skin laxity and lipodystrophy for the non-massive weight loss population<sup>12</sup>; this approach addressed a degree of ptosis that a standard abdominoplasty would not manage and a circumferential lower body lift would be too aggressive<sup>13</sup> [see **Figure, Supplemental Digital Content 1**, which demonstrates incision length for

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traditional abdominoplasty (180 degrees), extended abdominoplasty (270 degrees), and circumferential body lift (360 degrees), and summarizes various surgical incisions for truncal contouring, <http://links.lww.com/PRS/B579>]. To supplement the outcomes of an extended abdominoplasty, Shestak<sup>14</sup> and Mejia and Cárdenas Castellanos<sup>15</sup> have separately discussed the value of adding liposuction; they report an equivocal complication profile to Lockwood's high-tension lipoabdominoplasty with optimal lateral flank contouring. Despite the correction of the flank lipodystrophy and skin laxity, these patients still have persistent thigh ptosis and/or lipodystrophy because the lower extremity symptomatology is not addressed in this approach.

To manage these unwanted aesthetic outcomes, and having been disappointed with circumferential truncal lifting,<sup>16</sup> the senior author (S.T.H.) incorporated discontinuous thigh undermining, a common adjunct of the lower body lift for the massive weight loss population,<sup>4-9</sup> for his extended lipoabdominoplasty. This investigation represents the largest series to date of a 270-degree extended lipoabdominoplasty, or cosmetic body lift, for the non-massive weight loss population, with adjunctive circumferential thigh intervention and other technical refinements to achieve optimal truncal contouring.

## PATIENTS AND METHODS

### Study Design

Patients with adequate photographs who underwent a 270-degree extended lipoabdominoplasty (cosmetic body lift) between October of 2004 and March of 2014 were enrolled in this retrospective study. Patient demographics, such as age, sex, smoking status, medical comorbidities, and previous surgical procedures, were reviewed. Intraoperative data, including volume of lipoaspiration, were extrapolated. Complications, such as seroma, hematoma, infection, necrosis, delayed wound healing, deep vein thrombosis, and revision rates, were identified. Of note, delayed wound healing included any postoperative dehiscence that healed by secondary intention, including but not limited to stitch abscesses. Revisions ranged from scar modifications to secondary liposuction. On average, outcomes were reviewed 1 year postoperatively.

### Patient Selection

Patient selection for a cosmetic body lift is dependent on skin turgor. Abdominoplasty with

flank liposuction will not address lateral flank and thigh ptosis with poor skin quality. The patients in our clinical practice are potential rhytidectomy candidates (i.e., older patients); they have senile lateral ptosis or they may have even had previous flank liposuction with residual flank ptosis. Both of these subsets inherently have poor skin elasticity and will have minimal skin shrinkage with only liposuction. Thus, lateral skin excision should be performed in these cases when inadequate skin recoil is a certainty. Ultimately, this decision is a culmination of the clinical examination, patient desires, and assessment of the senior surgeon.

### Surgical Technique

The patient is marked in the operating room using the patient's bikini or undergarment as a guide. An incision in the lower abdominal crease is marked over the pubic area extending inferiorly to the iliac crest and posteriorly to the posterior superior iliac spine. The marking is confirmed to be 5 to 7 cm from the clitoral hood. (**See Figure, Supplemental Digital Content 2**, which demonstrates sample patient markings. The *left panel* represents the anterior markings: the *superior* and *inferior lines* outline the boundaries of the undergarment; the *middle line* marks the anterior incision, 5 to 7 cm from the clitoral hood. The *right panel* represents the lateral/posterior markings: the *superior* and *inferior lines* outline the boundaries of the undergarment; the *middle line* marks the lateral/posterior incision, <http://links.lww.com/PRS/B580>.)

The patient is placed in the supine position on an underbody warming blanket for subsequent induction, intubation, and circumferential prep-<sup>17</sup> Sterile venodyne compression stockings are placed and secured with sterile stockinettes and Elastoplast.

The patient is hyperextended at the waist for infiltration to avoid intraabdominal penetration. Liposuction stab incisions are placed at the waistline and umbilicus. Wetting solution is then injected conservatively throughout the abdominal and circumferential anterior thigh tissues. The patient is turned left side down with the right leg flexed 90 degrees at the hip to infiltrate the right flank and right thigh. A sterile bolster is placed to support the knee. The positioning and infiltration are repeated on the patient's left side. The patient is then placed in the supine position.

SAFE Liposuction (SAFELipo, Shreveport, La.) is performed for the anterior abdomen (over the costal margin) and thighs, typically with a

4- or 5-mm liposuction cannula.<sup>18</sup> Liposuction is then repeated with the patient in the left-side down position and the right-side down position. Liposuction not only deflates the fasciocutaneous flaps, but it also discontinuously undermines for optimal mobility. (See **Figure, Supplemental Digital Content 3**, which demonstrates abdominal liposuction in the supine position with the waist hyperextended, <http://links.lww.com/PRS/B581>, and **Figure, Supplemental Digital Content 4**, which demonstrates flank and thigh liposuction. The *left panel* demonstrates flank liposuction in the lateral position with the hip flexed 90 degrees. The *right panel* demonstrates thigh liposuction in the lateral position with the hip flexed 90 degrees, <http://links.lww.com/PRS/B582>.)

The patient is then placed in the supine position, slightly hyperextended; the umbilicus is circumscribed, and the abdominal flap is incised. The abdominal flap is elevated to the umbilicus; the umbilical stalk is left intact. A 4-inch, prefascial tunnel is extended from the umbilicus to the xyphoid; care is taken to limit lateral dissection superior to the umbilicus. Discontinuous undermining with a liposuction cannula is always performed for lateral attachments.<sup>4-9</sup> The rectus diastasis is plicated with a no. 0 barbed suture in two segments: xyphoid to umbilicus and umbilicus to pubis. The anterior abdominal skin is marked for resection; markings are placed with the hip flexed at 90 degrees and with the anterolateral thigh on maximal stretch. The skin is resected, and the anterior abdominal flap is temporarily secured. (See **Figure, Supplemental Digital Content 5**, which demonstrates abdominal flap resection and approximation. The *left panel* demonstrates marking for skin flap resection on maximal stretch. The *right panel* demonstrates approximation after resection, <http://links.lww.com/PRS/B583>.)

The patient is turned left side down with extension at the waist for lateral dissection. A sterile bolster is placed under the knee. The preoperative marking is incised, and the inferior flap is suction dissected to the greater trochanter; this dissection may be extended, depending on thigh lipodystrophy and ptosis.<sup>4-9</sup> The superior flap is dissected to a point congruent with the anterior abdominal flap dissection; however, the dissection may extend above this point, depending on adipose tissue deposition. The patient is flexed at the hip. Using a pinch technique, a lateral V is removed from the flank; often, equal amounts are marked and excised from both sides, possibly elongating the incision. Of note, the inferior

flap should be excised before the superior flap to ensure scar placement in a low position. Three point no. 2 Vicryl sutures (Ethicon, Somerville, N.J.) are used to approximate the superficial fascia, stabilize the scar position, and obliterate dead space; the dermis is closed with 2-0 barbed suture. The patient is then turned over onto the opposite side, and the identical procedure is performed. (See **Figure, Supplemental Digital Content 6**, which demonstrates lateral dissection and approximation. The *left panel* demonstrates superior and inferior lateral undermining. The *right panel* demonstrates marking for skin flap resection on maximal stretch, <http://links.lww.com/PRS/B584>.)

The patient is placed again in the supine position. Two 15-French closed suction drains are placed under the incision line in the flanks and exit the mons. Of note, drains are primarily indicated for the flanks; the tacking sutures in the abdominal flap typically prevent central seroma formation.<sup>6,11,16</sup> Tacking sutures are performed with no. 2 interrupted Vicryl to simultaneously contour the abdomen while improving distal flap perfusion. The umbilicus is birthed through a horizontal slit incision in the abdominal flap and secured with 3-0 Monocryl (Monocryl, Somerville, N.J.). Three point no. 2 Vicryl sutures are used to approximate the superficial fascia, stabilize scar position, and obliterate dead space; the dermis is closed with 2-0 Vloc. [See **Figure, Supplemental Digital Content 7**, which demonstrates final closure from the lateral position (*left*) and the anterior position (*right*), <http://links.lww.com/PRS/B585>.]

Figure 1 represents preoperative and postoperative photographs of this patient after a cosmetic body lift.

Postoperatively, a binder is placed around the abdomen, and the patient is kept in a flexed position. Compressive stockings are placed on the legs, and a Foley catheter is removed in the recovery room to ensure early mobilization. Patients are kept in the hospital for 1 to 4 days, depending on their age and desires. Routinely, patients are stable for discharge the day after surgery; however, they may elect to stay longer because of convenience (e.g., out of towners). In addition, our institution offers a cosmetic package for prolonged, affordable overnight outpatient care. This cosmetic package mimics other postprocedure body contouring protocols of neighboring institutions in the area. Of note, recent studies have favored the safety and efficacy of these 24-hour outpatient facilities for body contouring procedures.<sup>19</sup>

During the postoperative course, patients are typically seen at 1 week, 2 weeks, 6 weeks,



**Fig. 1.** Preoperative (*left*) and 1-year postoperative (*right*) images of a sample patient after a cosmetic body lift. Details of the operative approach from this patient are represented in **Figures, Supplemental Digital Content 2 through 7**, <http://links.lww.com/PRS/B580>, <http://links.lww.com/PRS/B581>, <http://links.lww.com/PRS/B582>, <http://links.lww.com/PRS/B583>, <http://links.lww.com/PRS/B584>, and <http://links.lww.com/PRS/B585>, respectively.

3 months, 6 months, and 1 year. The Jackson-Pratt drains remain in place until the drainage is less than 30 ml in 24 hours. The patient may shower daily. A girdle or supportive garment is suggested for 2 to 3 months to equalize intraabdominal pressure on the abdominal midline closure. Abdominal exercises are not allowed for 6 months after surgery, but early walking is encouraged.

## RESULTS

From 2004 to 2014, 72 consecutive patients with an average age of 53 years (range, 33 to 73 years) had a cosmetic body lift. Of these, 99 percent (71 of 72) were female patients and 1 percent (one of 72) was male. All patients were nonsmokers and had insignificant preoperative comorbidities: 15.3 percent (11 of 72) had previous abdominoplasty, 40.3 percent (29 of 72) had

previous rhytidectomy, 23.6 percent (17 of 72) had previous mastopexy, and 4.2 percent (three of 72) had previous brachioplasty. Intraoperatively, average liposuction volume was 1906 cc from the abdomen, 614 cc from the right lateroposterior flank/thigh, and 612 cc from the left lateroposterior flank/thigh (average total liposuction, 3067 cc). Concurrent with the body lift, 23.6 percent (17 of 72) had a rhytidectomy, 36.1 percent (26 of 72) had a mastopexy, and 5.6 percent (four of 72) had a brachioplasty. Cosmetic body lift complications included seromas in 2.8 percent (two of 72), infection in 4.2 percent (three of 72), delayed wound healing in 5.6 percent (four of 72), necrosis/ischemia in 4.2 percent (three of 72), revision in 18.1 percent (13 of 72), and deep vein thrombosis in 1.4 percent (one of 72), with 0 percent hematomas (zero of 72). Of note, 50 percent of all revision cases were liposuction secondary to weight gain.

Figures 2 and 3 demonstrate preoperative and postoperative images from a cosmetic body lift with corresponding topographical color maps.

## DISCUSSION

Previous investigations have suggested that lipoabdominoplasty versus traditional abdominoplasty has the highest level of satisfaction<sup>20,21</sup>; in addition, lipoabdominoplasty has an equivalent, or possibly improved, complication profile compared with traditional abdominoplasty.<sup>22–24</sup> Despite the reported safety and success of lipoabdominoplasty, lateral lipodystrophy and ptosis persist, limiting patient satisfaction and requiring revision procedures.<sup>10,25</sup> Conversely, a fleur-de-lis abdominoplasty may narrow the waist with improved flank contour, but the vertical incision and increased complication profile are not ideal for a cosmetic lift.<sup>26–28</sup> Our cosmetic body lift addresses the persistent thigh and flank laxity of a lipoabdominoplasty, with subjectively improved outcomes and an equivalent complication profile.

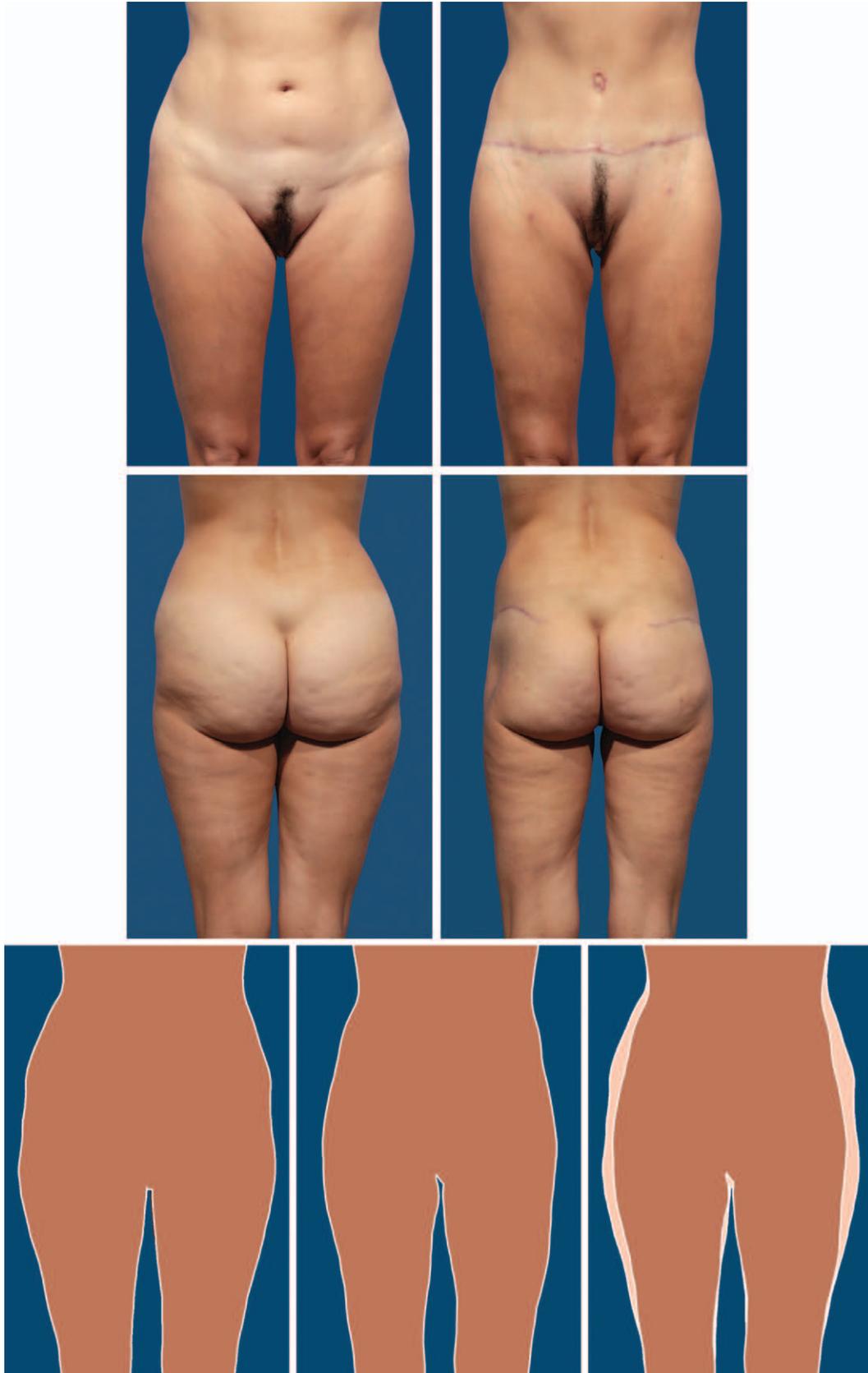
Despite our subjective improvement in truncal contour, we observed a slightly increased revision rate in our cohort compared with the lipoabdominoplasty reviews in the literature.<sup>29</sup> Of note, we observed that 50 percent of all revisions in this study were liposuction secondary to patient weight gain, and no revision was secondary to patient dissatisfaction. Furthermore, our patient population was significantly older than in other reviews<sup>25</sup>; thus, this aged population has poor skin elasticity, which might be less responsive to diet and exercise.<sup>30,31</sup> In addition, multiple series have documented that

dog-ear revisions, despite their prevalence, are rarely reported as complications because they can be locally addressed in clinic<sup>25</sup>; thus, presumably, our revision rate is equivalent to or even lower than that of other investigations. Finally, any revision or delayed healing may be related to the use of large, polyfilament no. 2 Vicryl sutures, known to possibly have a slightly higher risk of suture extrusion and/or tissue ischemia, but they are the preferred methodology of the senior author.

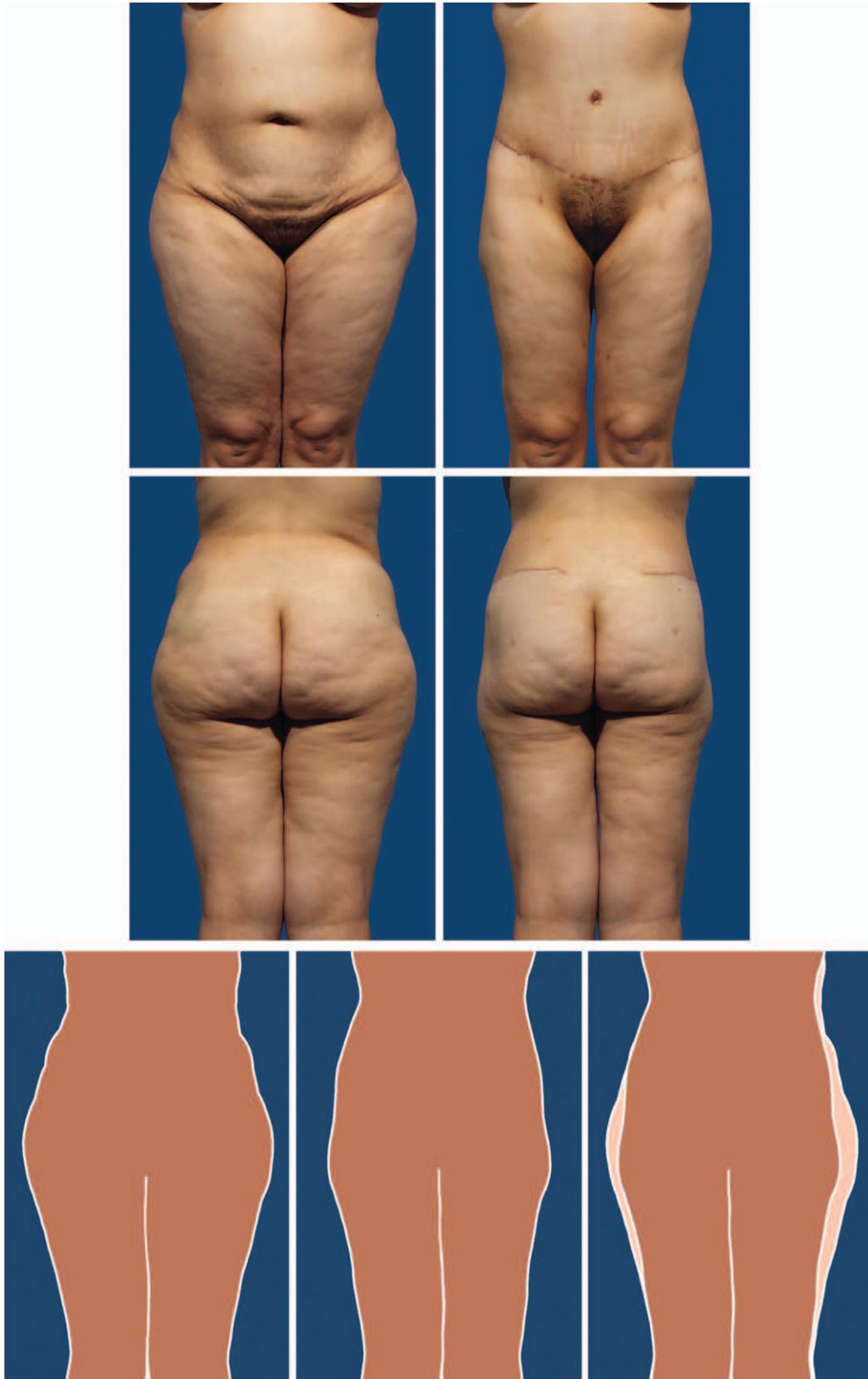
Consistent with other investigations in the literature, our series documented a low incidence of wound healing complications and a low risk of deep vein thrombosis, at 1.4 percent. Despite the possible increased risk of deep vein thrombosis in an abdominoplasty,<sup>32,33</sup> chemoprophylaxis was not indicated for any patients according to their Caprini risk assessment,<sup>34</sup> and it was deferred because of the extensive intraoperative dissection in this procedure. Early mobilization and pneumatic compression devices were our preferred modalities of prophylaxis, as in other investigations,<sup>35,36</sup> and they produced appropriate low-risk outcomes in our approach.

Previous authors have discussed the value of an extended lipoabdominoplasty for optimal truncal contouring for the non-massive weight loss population<sup>12,14,15</sup>; however, our approach offers certain refinements that can improve contour while concurrently decreasing operative time. The discontinuous undermining of the trunk and thigh fasciocutaneous flaps facilitates optimal mobility to achieve ideal cosmesis. Furthermore, the integration of circumferential thigh liposuction and/or direct undermining of the flank addresses lateral ptosis and lipodystrophy of the thigh while still preserving truncal vascularity.<sup>4–9</sup> In addition, tacking sutures, successfully reported for traditional abdominoplasty,<sup>6,11,16</sup> secure the abdominal flap in an ideal position while optimizing abdominal flap perfusion. Furthermore, barbed sutures, a surgical adjunct for lower body lifts,<sup>37</sup> provide decreased operative time for our approach while maximizing aesthetics. Finally, the supine, lateral positioning, instead of prone/supine positioning, maintains a sterile field for the entire procedure with optimal ventilation; this positioning reduces disposable costs and operative time, thus inherently reducing postoperative complications<sup>38</sup> while providing ideal visualization and contouring of the abdomen and thigh.

Our retrospective review identified that a majority of cosmetic body lift patients had a previous or concurrent rhytidectomy, brachioplasty, and/or mastopexy. This increased number,



**Fig. 2.** Preoperative (*above*) and 1-year postoperative (*center*) images of a sample “thin” patient after a cosmetic body lift. (*Below*) Topographical outline of the preoperative (*below, left*) and postoperative (*below, center*) profiles and an overlay of the two images (*below, right*) to represent the transformation after surgery.



**Fig. 3.** Preoperative (*above*) and 1-year postoperative (*center*) images of a sample “heavy” patient after a cosmetic body lift. (*Below*) Topographical outline of the preoperative (*below, left*) and postoperative (*below, center*) profiles and an overlay of the two images (*below, right*) to represent the transformation after surgery.

compared with other reviews, correlates to our aged population.<sup>25</sup> Not surprisingly, patients with facial or breast ptosis will have truncal laxity and seek correction. Our approach to truncal laxity mimics our composite face lift principles<sup>39</sup>; abdominal contouring requires a composite procedure to address abdominal, flank, and thigh lipodystrophy. The cosmetic body lift provides a nonsegmented surgical solution for trunk ptosis. Of note, our series documents the safety and efficacy of performing an additional procedure (rhytidectomy, mastopexy, or brachioplasty) concurrently with a cosmetic body lift; this approach did not increase our complication profile, and it maintained optimal aesthetic results.

Total operative time for a cosmetic body lift, in the hands of the senior author, typically averaged 4 to 5 hours. Of note, this time span parallels the recommended operative time for safe body-contouring practices that are currently in the literature.<sup>40</sup> We recognize that the cosmetic body lift with concomitant procedures may exceed the suggested time frame; however, as previously discussed, no significant complications were seen in our study. Interestingly, our postprocedure protocol and monitoring may limit complications that are periodically reported with these longer operations.

To explain our clinical outcomes during the patient consultation, we adopted a proven approach from our rhytidectomy population.<sup>39</sup> Patients view not only sample preoperative and postoperative photographs but also an overlay of the abdominal profile. This topographical map clearly demonstrates the circumferential reduction of the abdomen, flanks, and thighs. With this educational component, we have subjectively observed improved patient understanding and increased patient conversion for the procedure. Figures 2 and 3 demonstrate our clinical approach to patient education.

The limitations of this retrospective study are well appreciated. We understand that the assessment is a subjective interpretation of aesthetic success and inherently lacks the capability to provide a purely objective analysis; however, our postoperative data indicate an acceptable complication profile compared with the current literature. Longer studies in a larger patient population are needed to make definitive conclusions about the cosmetic body lift. Despite these limitations, there is strong evidence to promote the cosmetic body lift for non-massive weight loss patients to optimally address truncal and thigh soft tissue laxity and ptosis.

## CONCLUSIONS

This investigation is the largest series to date to evaluate the outcomes for a 270-degree extended lipoabdominoplasty (the cosmetic body lift) for the non-massive weight loss population. Consistent with reported complication rates of lipoabdominoplasty in the literature, the cosmetic body lift is a safe and effective operation for ideal waist and thigh contouring.

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