

## Autoprosthesis Buttock Augmentation During Lower Body Lift

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**Abstract.** With the increasing popularity of bariatric surgery, patients with multiple body contour deformities have become more common in plastic surgery practice. Most of the deformities involving the abdomen, thighs, and buttocks can be effectively corrected with belt lipectomy and lower body lift. A common problem with this procedure is postoperative loss of gluteal projection and resulting flattened buttock contour, which is directly proportional to the extent of lower body lift achieved. The use of local myocutaneous flaps to provide coverage for the lumbosacral defects is a common plastic surgery procedure. The authors have used these techniques to create an autologous buttock implant for additional projection during a lower body lift. A local myocutaneous flap originating within the regularly excised supragluteal tissue is rotated caudally to function as an autologous buttock implant. This flap has reliable circulation, can be custom designed for each patient, requires minimal additional operating time, and allows the creation of more than one flap if necessary. This article describes the results of this procedure used for 20 consecutive women. There were no major complications, and the most common minor complications included delayed wound healing and local hardness in the area, suggesting fat necrosis, which resolved without intervention in a few months. High patient satisfaction combined with a low complication rate suggests that this reliable, versatile technique nicely complements the lower body lift procedure.

**Key words:** Abdominoplasty—Belt lipectomy—Body contouring—Body lift—Buttock implant—Buttock lift—Gluteal flap—Torsoplasty

With the increasing availability and popularity of bariatric surgery, patients with multiple body contour deformities have become more common in plastic surgery practice. Consequently, familiarity with the presentation of these patients and effective treatment are becoming increasingly important [3]. Single-stage belt lipectomy with lateral thigh and buttock lift as well as liposuction effectively corrects contour deformities of the abdomen, the lateral highs, the buttocks, the supragluteal area, the lateral supragluteal area, and the lower back, leaving only one circular scar and effectively treating truncal contour as a unit [1,2,4,5,9–13,17–19,24,27]. A frequent shortcoming of this procedure is postoperative loss of gluteal projection and flattened buttock contour caused by removal of soft tissue and suspension of the remaining tissue, resulting in a lift that flattens the natural curvaceous shape of the buttocks [20–23]. This deficit is directly proportional to the extent of lower body lift achieved.

The use of local myocutaneous advancement flaps for the repair of lumbosacral defects is a proven and reliable procedure [8,14,16,21,22,25,26]. These flaps possess reliable irrigation from the numerous gluteal perforator arteries in the region [7,15] and consistently provide an ample amount of tissue, excellent mobility, and good vascularity, which allows them to cover large areas in one stage. These flaps do not sacrifice the vascularity, innervation, or function of the underlying gluteus maximus muscle [8,14,16,21,22,25]. This article presents a new technique that applies the knowledge gained from the use of local myocutaneous advancement flaps for the repair of lumbosacral defects to create a dermal fat flap as an autologous buttock implant. This dermal fat flap provides additional projection during belt lipectomies with lower body and buttocks lifts and results in a more pleasing and natural body contour, as well as more physician and patient satisfaction.

## Materials and Methods

From September 2003 to December 2004, a total of 20 women were treated for multiple body contour deformities involving the abdomen, thighs, and buttocks. A circular lipectomy with lateral thigh and buttock lift as well as liposuction of the back and the thighs was used. Some patients underwent additional cosmetic surgery at the same time. In addition, all the patients were treated with dermal fat flaps to address buttocks contour. All the surgeries were performed by the senior author (O.S.).

Each patient's medical record was reviewed with a focus on physical and mental health, expectations, and indications for the procedure. The details of the operation were explained, and the patients were shown before and after pictures to ensure that they clearly understood the magnitude of the procedure and the locations of the scars. Preoperative and postoperative photographs were taken for every patient.

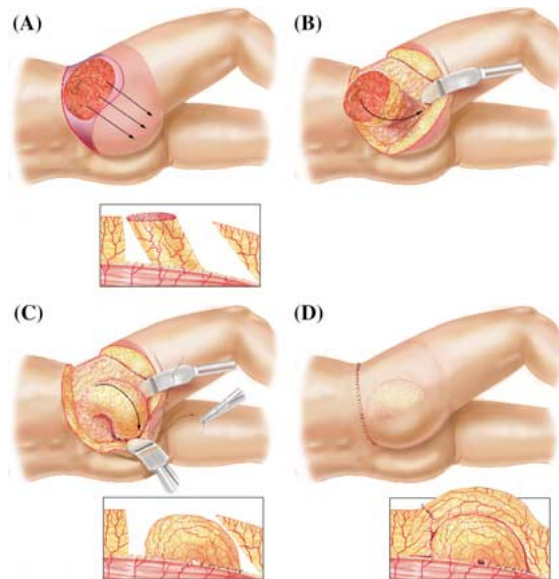
### Preoperative Markings

Preoperative markings are a crucial component of successful surgery for achieving desired results. Patients were marked preoperatively in both standing and decubitus positions (Table 1). To assess lateral mobility, the thigh was abducted while the patient was in the decubitus position, and symmetry of the incisions was evaluated with the patient standing. An ovoid dermal fat flap originating in the medial half of the regularly excised supragluteal tissue was marked. The size of the flap was individualized according to the patient's buttocks contour. More than one flap was designed if necessary.

### Surgical Technique

Liposuction is performed where necessary, followed by positioning of the patient for the actual resections. In step 1 (Figure 1A), the patient is placed on a beanbag in the supine position, then turned to the left lateral decubitus position, ensuring that the waist and knees are bent. The thigh is abducted; the knee is rested on a Mayo stand with a pillow; and an axillary roll is placed. The beanbag then is hardened, and the patient is again prepared and draped. After circumferential incision, the flap is deepithelialized.

Step 2 (Fig. 1B) involves dissection of the flap down to the fascia at an oblique angle, undermining the superior and inferior border. The base of the flap should originate more inferiorly than the surface, which allows for greater mobility inferiorly and a longer, more mobile dermal fat flap. The base of the flap is approximately the same size as the surface. A pocket is created for insertion of the flap by under-



**Fig. 1.** Surgical steps in the creation of the perforator-based dermal fat flap. (A) Step 1. (B) Step 2. (C) Step 3. (D) Step 4. See text for a description of the four steps.

mining the buttock in the plane above the fascia and extending it a sufficient length to reach the inferior gluteal crease. This allows more effective mobilization and sliding of the buttock tissue over the flap.

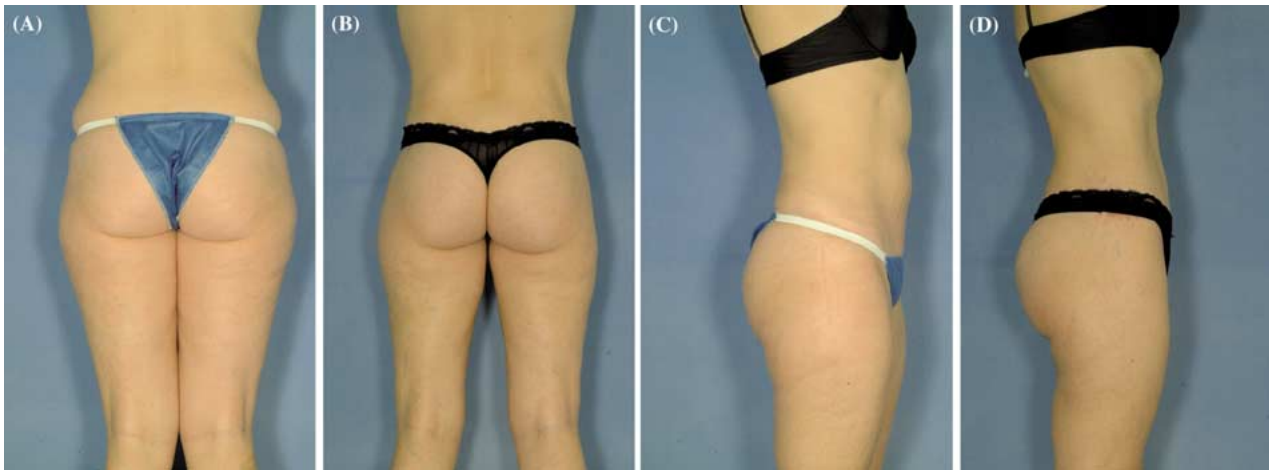
In step 3 (Fig. 1C), the flap is rotated caudally 180° into the pocket and anchored to the fascia with polyglactin 910 (3/0 Vicryl) suture. Securing the deepithelialized surface upside down gives the flap a more rounded implant-like shape.

In step 4 (Fig. 1D), the remaining buttock skin is pulled in the reverse direction to cover the flap, and two drains are placed. The superior and inferior edges are approximated in a layer closure with deep non-absorbable polybutylate-coated braided polyester (0 Ethibond) interrupted sutures, subdermic running absorbable polyglactin 910 (3/0 Vicryl), and subcutaneous running absorbable poliglecaprone 25 (4/0 Monocryl).

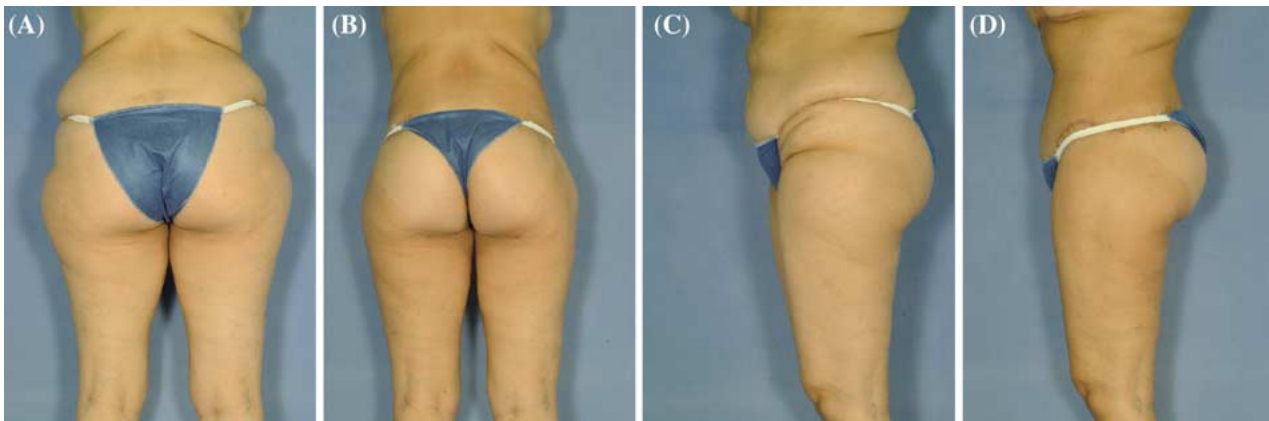
The patient is turned to the other lateral decubitus position, and the same procedure is performed on the opposite side. At completion of the dermal flap procedure, the patient is placed in the supine position, and standard abdominoplasty is performed.

## Results

Between September 2003 and December 2004, the described procedure was performed for 20 consecutive women ranging in age from 31 to 61 years. The mean operative time was 314 min (range, 253–425 min), and the dermal fat flap technique resulted in an addition of 30 min (range, 25–35 min) to the total



**Fig. 2.** A and C are before, whereas B and D are 8 months after liposuction, dermal flap fat implants, and abdominoplasty. The operative time was 305 min, including an additional 25 min for the dermal fat flap technique. The total resection weight was 4.6 kg, with 2,600 ml of fat obtained by liposuction.



**Fig. 3.** A and C are before, whereas B and D are 7 months after liposuction, dermal flap fat implants, and abdominoplasty. The operative time was 410 min, including an additional 30 min for the dermal fat flap technique. The total resection weight was 10.5 kg, with 3,300 ml of fat obtained by liposuction.

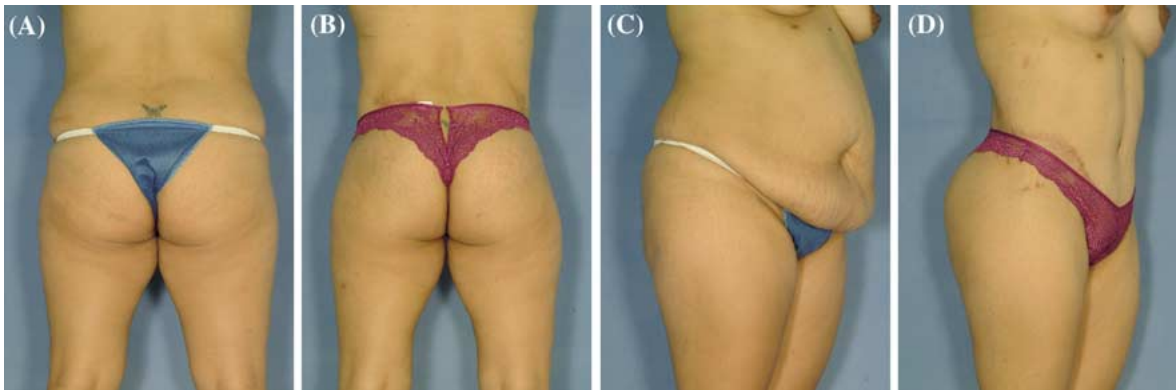
operative time. The total resection weight ranged from 3.4 to 111.6 kg (mean, 5.7 kg), and the average volume of fat obtained by liposuction was 2,800 ml. The mean operative blood loss was 250 ml (range, 200–300 ml), and none of the patients required transfusions. The mean length of hospital stay was 1.7 days (range, 1–3 days).

No major complications were seen. Minor complications occurred in seven cases and included delayed healing for two patients, partial dehiscence requiring wound VAC for two patients, seroma for one patient, and pressure necrosis for one patient. Delayed wound healing attributable to skin tension was managed using daily dressing changes with good results. Two patients had local hardness in the gluteal area, suggesting fat necrosis, which resolved without intervention within a few months and did not result in any contour deficits.

Both patient and surgeon satisfaction were recorded as good to excellent in every case. In all cases, the results far exceeded patients' expectations (Figs. 2–4). Anterior, posterior, and lateral preoperative and postoperative photographs were compared. The flap successfully increased projection, improved contour of the buttocks, and remained stable over time.

### Discussion

Circular lipectomy with lateral thigh and buttock lift is based on the prior experiences of several surgeons [1,2,4,5,9–12,17,18,20,23,24,27]. With the evolution of this procedure, it currently is possible to achieve lifting of the buttock and lateral thigh, reduction in the number and size of adipose cutaneous folds of the lower and middle back, improvement in the waist



**Fig. 4.** A and C are before, whereas B and D are 6 months after liposuction, dermal flap fat implants, and abdominoplasty. The operative time was 400 min, including an additional 25 min for the dermal fat flap technique. The total resection weight was 8.5 kg, with 2,900 ml of fat obtained by liposuction.

silhouette, elimination of redundant flank tissue and abdominal skin, and plication of the rectus abdominis muscle. The result is an improved body contour and tightening of the skin. Recent reports conclude that this can be achieved in a safe manner for properly selected patients [2,5,9,14,17,20,23,27].

One major shortcoming of the procedure is a substantially decreased projection in the buttocks contour, which is directly proportional to the extent of the lower body lift. With a recognition of this deficiency, other local flaps have been described [6,23]. In our experience, these flaps have limited mobility, and if they are based over the sacral area, the rotation gives additional bulk to the sacral area and contraindicates liposuction of this area.

Local advancement flaps for the repair of lumbosacral defects have been widely accepted as reliable for coverage of sacral and ischial defects [8,14,16,21,22,25,26]. The gluteal dermal fat flap described in this report allows the surgeon to improve the buttocks contour without extending the procedure significantly ( $\times 30$  min) or increasing morbidity. The flap has good mobility, and is well vascularized by the numerous gluteal perforators in the region. The oblique dissection increases the length and reach of the flap. The flap can be custom shaped, or more than one flap can be elevated independently, if indicated.

## Conclusion

The creation of an autologous buttock implant from a dermal fat flap provides additional projection during a lower body lift. The flap has reliable circulation, requires minimal additional operating time, does not increase operative morbidity, and can be custom designed for each patient. This reliable, versatile technique complements the lower body lift, resulting in increased patient satisfaction and a more pleasing body contour.

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