

Brazilian Buttock Lift for the Weight-Loss Patient

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Abstract

Introduction: Performing optimal gluteal augmentation using traditional methods in moderate to severe weight-loss patients poses a surgical challenge as such patients typically present with (1) significant skin redundancy, (2) soft tissues containing higher density of connective tissues, and (3) buttock ptosis.

Materials and Methods: Excess skin redundancy and buttock cheek ptosis require consideration of supplemental excisional tucking to achieve optimal results. In addition, subcutaneous tissues that maintain more connective tissue pose difficulty with fat removal using traditional liposuction techniques. As such, we present a novel surgical technique to optimally augment and shape the buttock in patients who have undergone weight-loss.

Results: This procedure uses a modified lateral thigh and buttock tuck excision not only to lift the buttock cheek complex but also to create a dermal fat flap that is transposed into the upper buttock pole to achieve upper buttock fullness. The remainder of the excised tissue undergoes novel ex-vivo liposuction, which allows for simultaneous repair of the created excision line while fat is being harvested.

Discussion: We present a new Brazilian buttock lift (BBL) procedure for weight-loss patients using a novel modified lateral thigh and buttock tuck with a dermal fat flap as well as ex-vivo liposuction and fat transfer. The described ex-vivo liposuction technique provides several advantages that include (1) limiting operative time, (2) allowing for maximal fat removal while avoiding unnecessary trauma to the patient, and (3) providing improved quality of fat that is less blood tinged. The lateral thigh and buttock tuck with dermal fat flap is used to eliminate buttock ptosis and augment the upper buttock. The ex-vivo harvested fat to the middle and lower buttock to complete buttock augmentation for the Brazilian buttock lift in a seamless fashion.

Conclusions: In summary, we present a novel Brazilian buttock lift technique to augment the buttock in weight-loss patients that maximizes both patient safety and efficacy.

Keywords

adiposity, body contouring, excision, fat transfer, general body contouring surgery, general cosmetic surgery, liposuction, skin redundancy, weight loss

Introduction

Weight-loss patients universally demonstrate buttock hypotrophy as loss of fat volume is a major goal of these patients. Aesthetic procedures to improve the appearance of the buttock region have increased in popularity within the past decade given the heightened sentiment around an aesthetically pleasing buttock that is full and shapely.¹ In particular, the Brazilian Buttock Lift, an easily reproducible procedure with a lower incidence of complications than buttock implants,² is considered the preferred method for gluteal augmentation.³ This procedure involves autologous fat transfer to the buttock region to increase the volume and girth of the buttock, thus creating a more attractive appearance.⁴ Ideal candidates for a Brazilian Buttock Lift are those with minimal soft tissue looseness,⁵ little to no buttock ptosis, and

moderate fat volumes to transfer to the gluteal region.⁶ As such, a strong surgical challenge presents itself when performing a Brazilian buttock lift on patients who have accomplished moderate to severe weight loss and in turn have significant redundant skin, resultant buttock sagging, severe buttock deflation, and lack of body fat volume for transfer. Specifically, the subcutaneous tissue of the lower back and flanks of such weight-loss patients typically possess mostly

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connective tissue while being void of generous fat volume.^{7,8} Consequently, traditional in-vivo liposuction measures do not suffice to effectively contour the buttock region of such patients who present with a greater amount of connective tissue than fat in their soft tissues, significant lower back skin redundancy, as well as buttock ptosis.⁶ To overcome these challenges of performing a Brazilian buttock lift on weight-loss patients, traditional buttock augmentation is modified to include a lateral thigh and buttock tuck with a dermal fat flap as well as ex-vivo liposuction and fat transfer.

We present a novel technique involving differential resection of the lower back and flank region that is partially incorporated into the dermal fat flap and partially used for ex-vivo liposuction, where liposuction is performed on the fat flap after it has been removed from the patient. This is in contrast to standard lateral thigh and buttock tuck that involves in-vivo liposuction of the soft tissue prior to the excision and tuck. In terms of gluteal augmentation, the dermal fat flap maximizes buttock volume transfer by augmenting the upper buttocks, while ex-vivo liposuction is performed to remove the fat from the upper aspect of excised tissue. In addition, buttock ptosis is countered by eliminating lower back and flank skin redundancy using the described modified lateral thigh and buttock tuck. Ex-vivo liposuction provides several advantages over in-vivo liposuction. Advantages include limiting operating time, fully maximizing the amount of fat harvested, avoiding unnecessary risk to patients from aggressive in-vivo liposuction in an attempt to remove the fat incorporated among more dense connective tissue, and improving the quality of fat harvested that is less blood tinged.

Materials/Methods

Pre-Operative Markings

A thorough evaluation of the patient's body, alongside a comprehensive surgical plan, are critical in achieving optimal body contouring results. While standing upright in the preoperative phase of treatment (Figure 1), the patient is marked for areas of liposuction and areas of excision for the lateral thigh and buttock tuck and the dermal fat flap in the lower back and upper buttock regions. Liposuction of the upper and middle back is performed using ultrasound liposuction. Skin redundancy of the upper and middle back is eliminated using Renuvion J plasma subdermal coagulation. The lower back skin redundancy is eliminated with the above tuck. The dermal fat flap is designed to accomplish aesthetic goals of the upper buttock filling, tailored to the patient's desired buttock aesthetic goals using the buttock assessment tool.⁹ The lateral demarcation of the flap correlates with the lateral aspect of the planned lateral buttock perimeter. Waistline narrowing is ensured by both excision of tissue corresponding to the lateral thigh and buttock tuck zone as well as in-vivo liposuction corresponding to negative transition zones per previously published high-definition liposuction

protocols.¹⁰ Special attention is paid to each of the above zones to ensure the creation of aesthetically pleasing back and buttock contour lines with smooth transitions.

Surgical Technique

The patient is placed in a prone position on the operating table after general anesthesia is administered (Figure 2). High-definition ultrasound liposuction and Renuvion J plasma skin tightening is performed in the traditional manner as marked above for the upper and middle back. First, the subcutaneous tissue is infused with 1 L of lactated ringer, 50 mL of epinephrine, and 20 mL of 8% bicarbonate solution. The VASER ultrasound energy is administered using 5 ring probe and 70% energy to emulsify the fat prior to liposuction. Following removal of fat, skin laxity in the upper and middle back is eliminated with administration of 6 passes of Renuvion J plasma set at 80% power, 3 L/min Helium flow. Finally, the dermal fat flap is raised, and the lateral thigh and buttock excision is performed to allow for ex-vivo liposuction on the sterile surgical table (Figures 3 and 4). The dermal flap is then de-epithelialized, and rakes are used to elevate the flap of the upper buttock region where the flap is transposed into (Figure 5). These described steps are performed bilaterally.

The lateral thigh and buttock tuck is performed by raising staggered incision lines in layered fashion delineating the excised and preserved dermal fat flap. Meanwhile, fat is collected from the lateral thigh and buttock excisions through ex-vivo methods (Figure 6). This not only saves time as a safety measure, but also maximizes quality and volume of fat removal. The fat collected from the excised flap can be suctioned at the operative or surgical table rather than in-vivo so that the lateral thigh and buttock incision can be simultaneously repaired using 2-0 PDS for the Scarpa's fascia and 3-0 PDS for the subdermal and running subcutaneous layers (Figure 7). Additional in-vivo liposuction is performed from the waistline and other pre-operatively designated areas, such as the upper and middle back, lateral thighs, and/or medial thighs¹¹. After the fat is harvested, it is irrigated with gentamicin 80 mg in 1 L lactated ringer antibiotic solution and aspirate is removed. Then, it is re-injected into the middle and lower buttocks to complete the pre-operatively planned Brazilian Buttock Lift to achieve the patient's aesthetic goals.

Results

In Figure 8, we present a case of our modified Brazilian buttock lift performed on a 58-year-old female patient who underwent extensive weight loss of 80 pounds prior to her procedure. The upper buttock dermal fat flap procedure was used in line with our modified lateral thigh and buttock tuck, as well as high-definition ultrasound liposuction of the upper and middle back for fat transfer to the middle and lower buttock to achieve a shapely, augmented buttock. Figures 9-13 present four patients who underwent a modified Brazilian

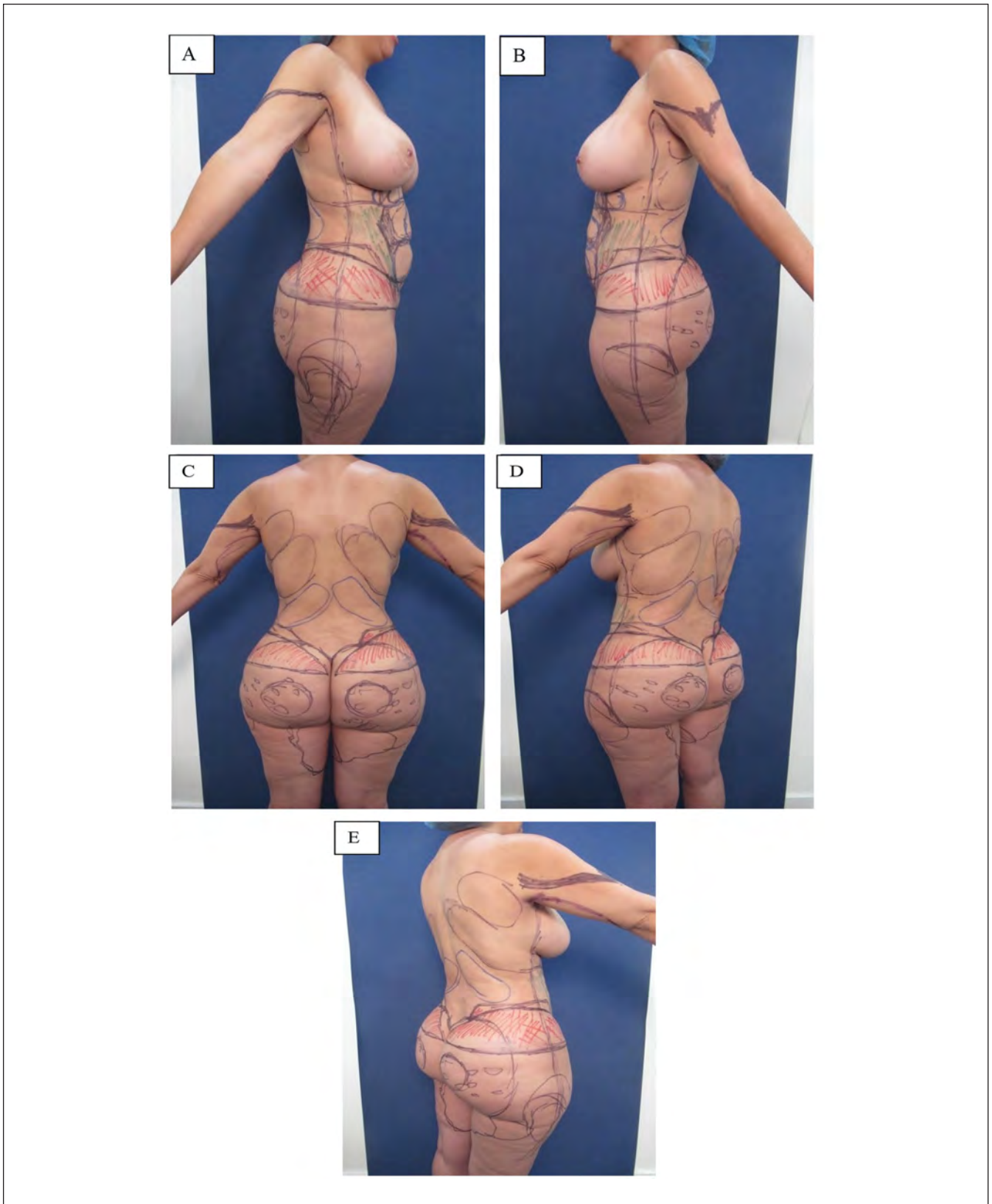


Figure 1. (A-E) Pre-operative markings of a 40-year-old female patient set to undergo our modified lateral thigh and buttock tuck, as well as ultrasound liposuction and Renuvion J Plasma skin tightening of the middle back, upper back, and medial thighs, with fat grafting to the lower and middle buttocks.

Note. The dermal fat flap is demarcated in the lower back and upper buttock regions.



Figure 2. Patient is placed in prone position on the operating table, and incision is made to delineate the dermal fat flap and lateral thigh and buttock tuck.



Figure 4. Lateral thigh and buttock excision is performed.



Figure 3. The dermal fat flap is isolated with removal of tissue to be excised.

buttock lift in conjunction with in-vivo and ex-vivo ultrasound assisted liposuction. The results include an improved back contour and upper buttock fullness.



Figure 5. Rakes are used to elevate the flap of the upper buttock region.

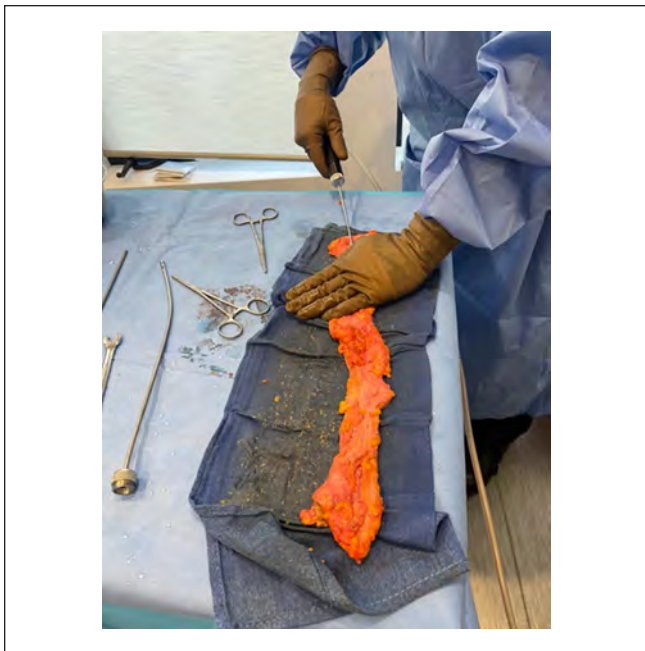


Figure 6. Fat is collected from the lateral thigh and buttock excisions through ex-vivo liposuction methods.



Figure 7. The lateral thigh and buttock incision is repaired using 2-0 PDS for the Scarpa's fascia and 3-0 PDS for the subdermal and running subcutaneous layers.

Discussion

We present a novel Brazilian buttock lift technique for the weight-loss patient. First, fat is collected with in-vivo ultrasound liposuction followed by Renuvion J plasma skin

tightening of the upper and middle back. Furthermore, fat is collected from the remainder of the excised tissue using ex-vivo liposuction. Ex-vivo liposuction provides multiple advantages. First, ex-vivo liposuction saves operative time as the excision line can be repaired while liposuction is being performed. Second, both maximal volume and improved quality of fat can be harvested when compared with traditional in-vivo liposuction. This is because harvest of fat from the high-density connective tissue with aggressive liposuction can be performed safely without risk of harm to the patient. This provides greater volume of fat than if performed in-vivo. In addition, we have consistently observed that the fat harvested is cleaner and less bloody (Figure 14). This advantage is best supported by routine processing of fat with antibiotic irrigation which is performed to remove any pro-inflammatory blood products that may compromise fat graft take. The reason for the observed higher fat quality is that there are likely no actively circulating blood cells in the tissue being suctioned. This fat is used to augment the middle and lower buttock cheeks. To date, we have not observed any graft loss, contamination, nor infection in ex-vivo harvested cases. Second, our modified lateral thigh and buttock tuck with a dermal flap ensures maximum upper buttock fullness. The dermal fat flap serves 2 advantages. The first is that it maximizes upper buttock filling by virtue of retaining not only all of the fat but also all of the connective tissue volume of the lower back and flanks. This is critical as the volume of body fat available is often limited. Moreover, the dermal flap has good mobility and is inherently well vascularized to allow for effective retention of augmentation of the upper buttocks.⁶ The resulting aesthetics of the buttock region post-procedure have proven pleasing and seamless with regard to the junction of the upper dermal fat filled buttock versus middle and lower buttock gluteal lipografting. Patients have observed heightened buttock projection, maximal waistline narrowing, smooth transition line of the waist depicted by the Tilde Curve, generous buttock volume, and resolution of buttock sagging.

There is no evidence to support the hypothesis that ex-vivo liposuction reduces the risk of fat emboli; however, in the 20 cases performed using this technique, no instances of fat emboli have been observed. Furthermore, we cannot determine if there is a difference in viability between fat harvested using ex-vivo liposuction versus in-vivo liposuction, as we evenly inject each buttock cheek with the same volume of ex-vivo and in-vivo fat to avoid any hypothetical graft take asymmetry. An animal study would be helpful to delineate the viability differences between fat harvested using ex-vivo liposuction and in-vivo liposuction techniques. While in-vivo liposuction benefits from VASER single cell fat transfer, ex-vivo liposuction benefits from being less blood-tinged with theoretically less pro-inflammatory cells. When ex-vivo liposuction is performed with circumferential body contouring, we routinely save 1.5 hours on total operative times. Total operating time to perform the modified lateral thigh and buttock tuck, liposuction



Figure 8. A 42-year-old patient, (A, C) before and (B, D) 3 months after our modified lateral thigh and buttock tuck procedure performed with an upper dermal fat flap, alongside ex-vivo liposuction and in-vivo ultrasound liposuction and Renuvion J Plasma skin tightening of the middle back and upper back.

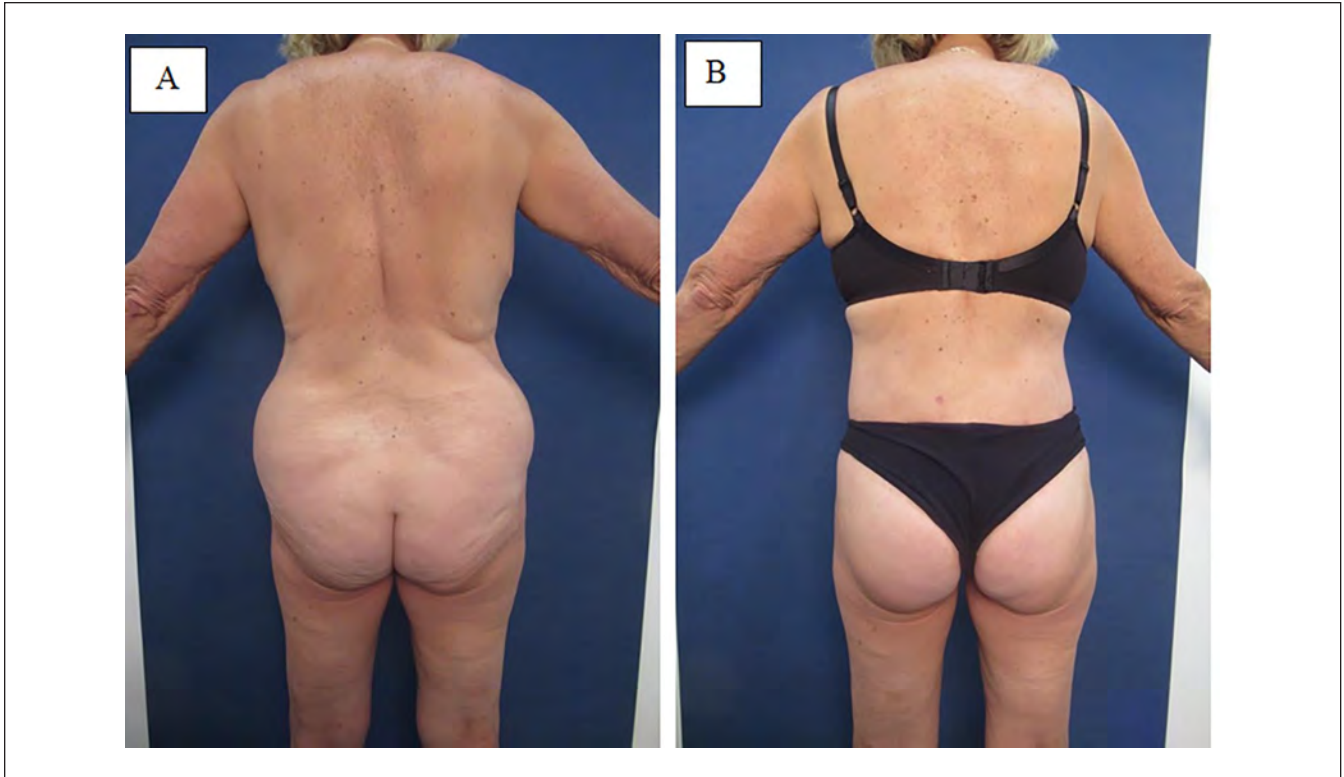


Figure 9. A 67-year-old patient, (A) before and (B) 3 months after our modified lateral thigh and buttock tuck procedure performed with an upper dermal fat flap, alongside ex-vivo liposuction and in-vivo ultrasound liposuction and Renuvion J Plasma skin tightening of the middle back and upper back.

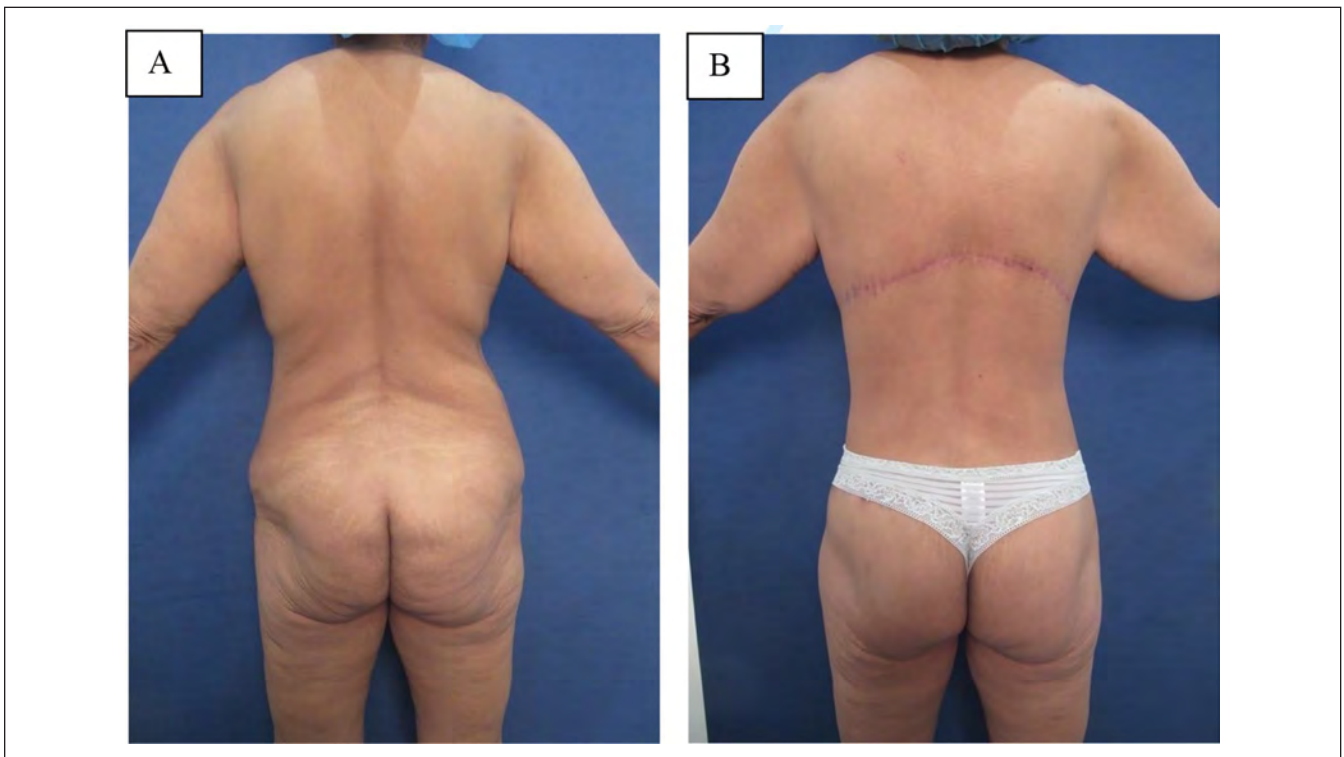


Figure 10. A 42-year-old patient who lost 60 lbs. following bariatric surgery, (A) before and (B) 3 months after our modified lateral thigh and buttock tuck procedure performed with an upper dermal fat flap, alongside ex-vivo liposuction and in-vivo ultrasound liposuction and upper body lift.

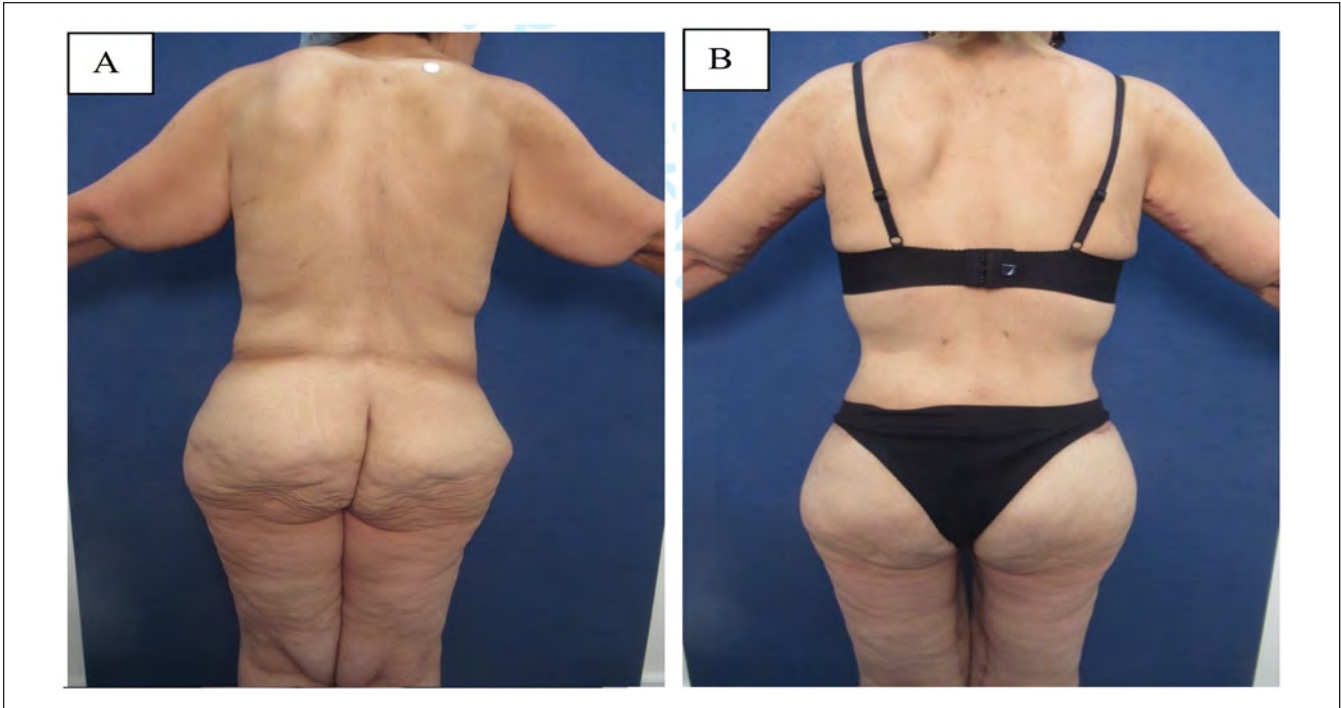


Figure 11. A 52-year-old patient who lost 140 lbs. following gastric bypass, (A) before and (B) 3 months after our modified lateral thigh and buttock tuck procedure performed with an upper dermal fat flap, alongside ex-vivo liposuction and in-vivo ultrasound liposuction and Renuvion J Plasma skin tightening of the upper and middle back.

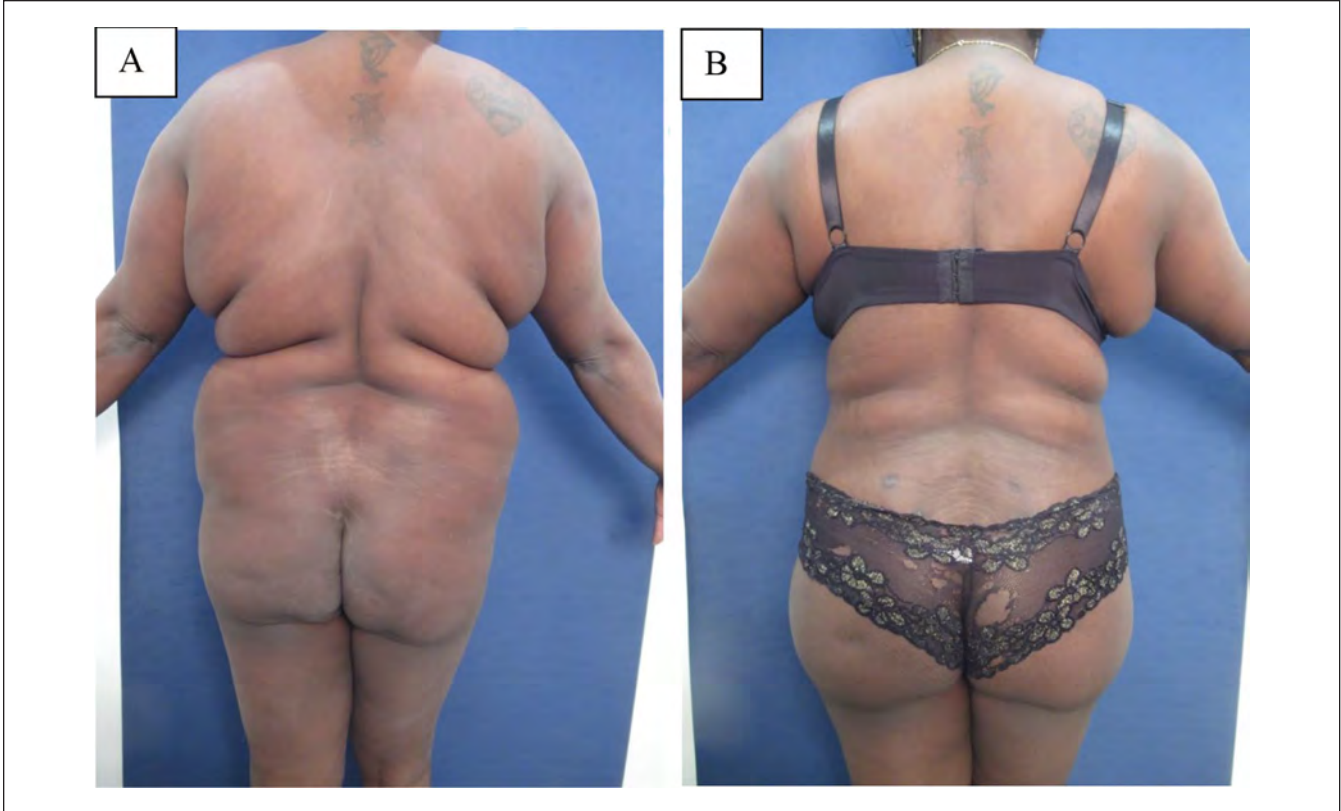


Figure 12. A 35-year-old patient, (A) before and (B) 3 months after a lateral thigh and buttock tuck procedure performed with an upper dermal fat flap, alongside ex-vivo liposuction and in-vivo ultrasound liposuction and Renuvion J Plasma skin tightening of the middle back and upper body lift.

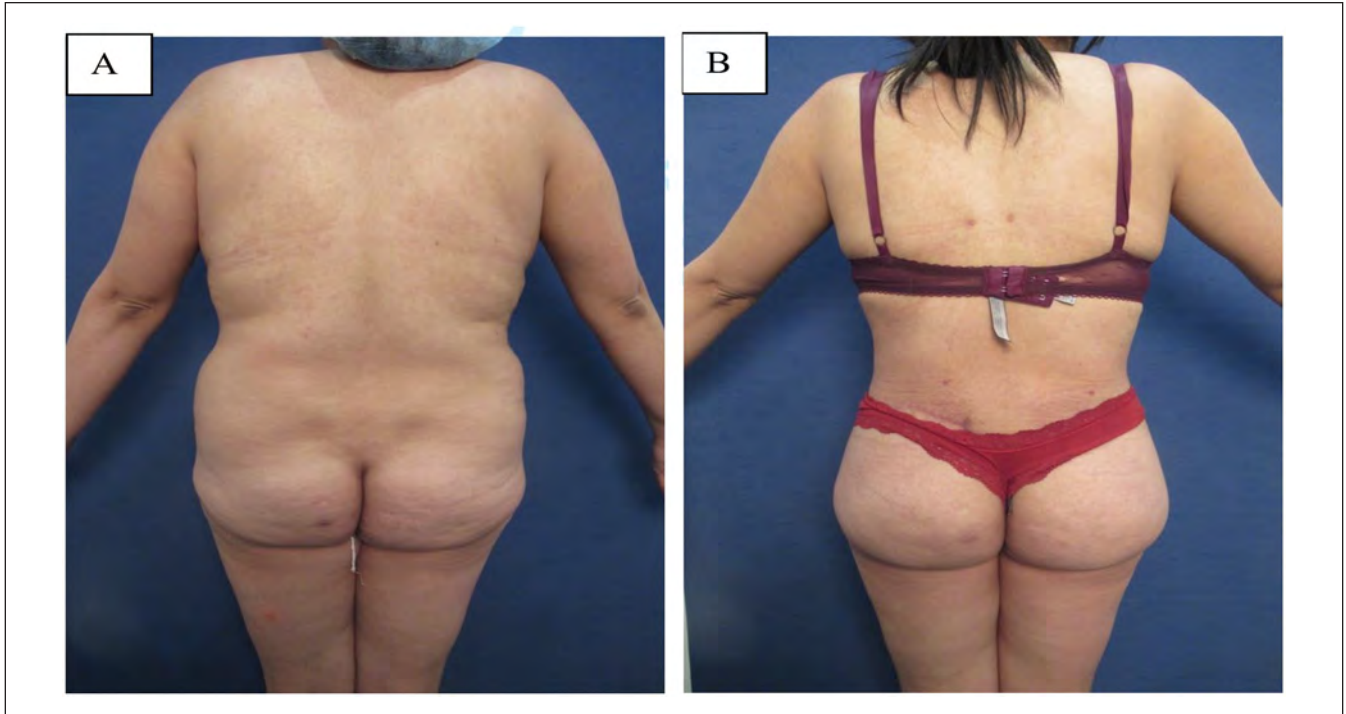


Figure 13. A 26-year-old patient, (A) before and (B) 3 months after a lateral thigh and buttock tuck procedure performed with an upper dermal fat flap, alongside ex-vivo liposuction and in-vivo ultrasound liposuction and Renuvion J Plasma skin tightening of the middle back and upper back.

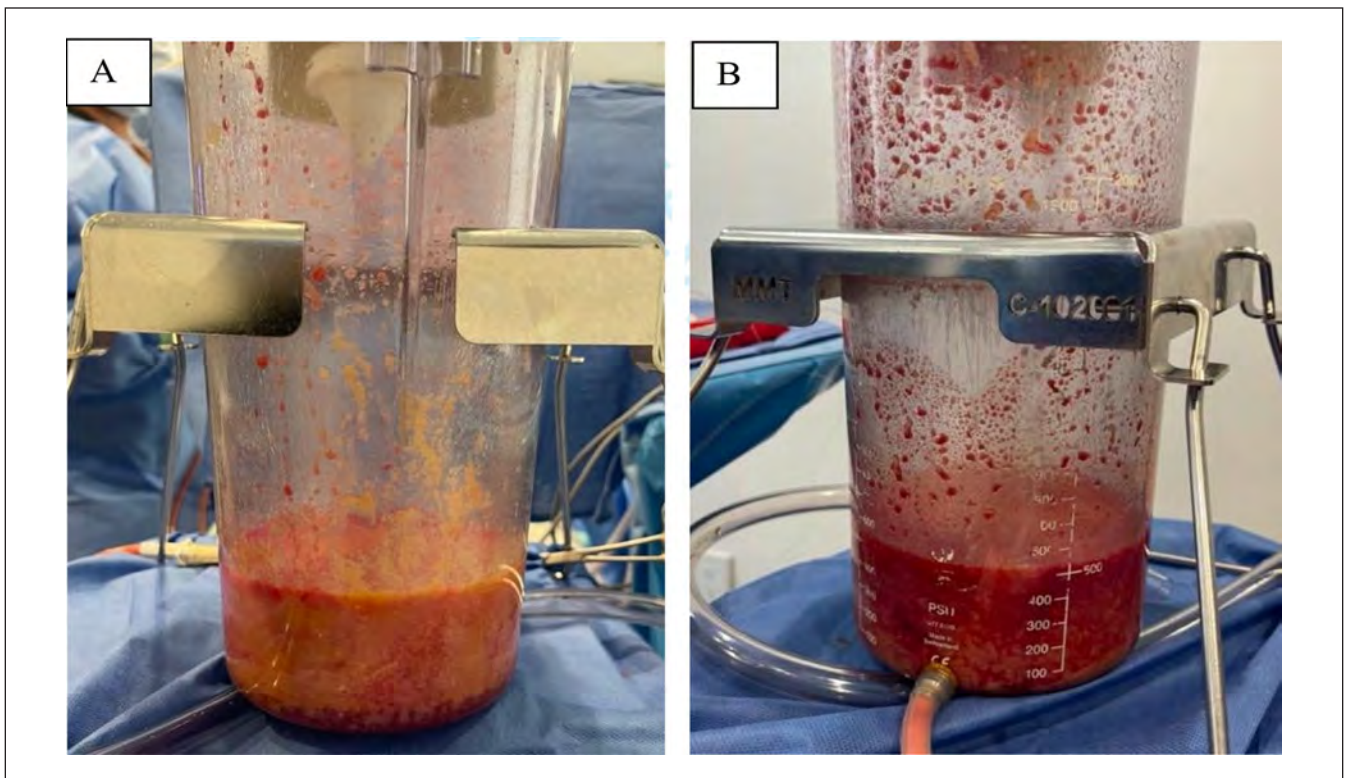


Figure 14. One advantage to using ex-vivo liposuction is the quality of fat harvested: (A) shows fat harvested using ex-vivo liposuction and (B) shows fat harvested using in-vivo liposuction from the same patient. Note. Fat harvested from ex-vivo liposuction is of higher quality and less blood-tinged.

of the upper back and middle back, and Renuvion J plasma subdermal coagulation of the upper back and middle back is approximately 2.5 hours.

Conclusions

We conclude that the upper buttock dermal fat flap modification of the lateral thigh and buttock tuck technique is crucial for performing a Brazilian buttock lift on patients who have undergone weight loss, as simple fat grafting transfer alone may not prove effective in achieving desired results. Combining both traditional in-vivo and our novel ex-vivo liposuction methods provides several advantages that include minimizing operating time and maximizing fat harvesting capacity and quality.⁶ The high satisfaction rate of patients alongside improved efficacy associated with our novel Brazilian butt lift suggests that this particular technique is reliable and easily reproducible. Compared with traditional gluteal augmentation procedures involving fat suctioning alone, this procedure is more time conducive and safe, and produces superior contouring results for weight-loss patients.

Declaration of Conflicting Interests

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